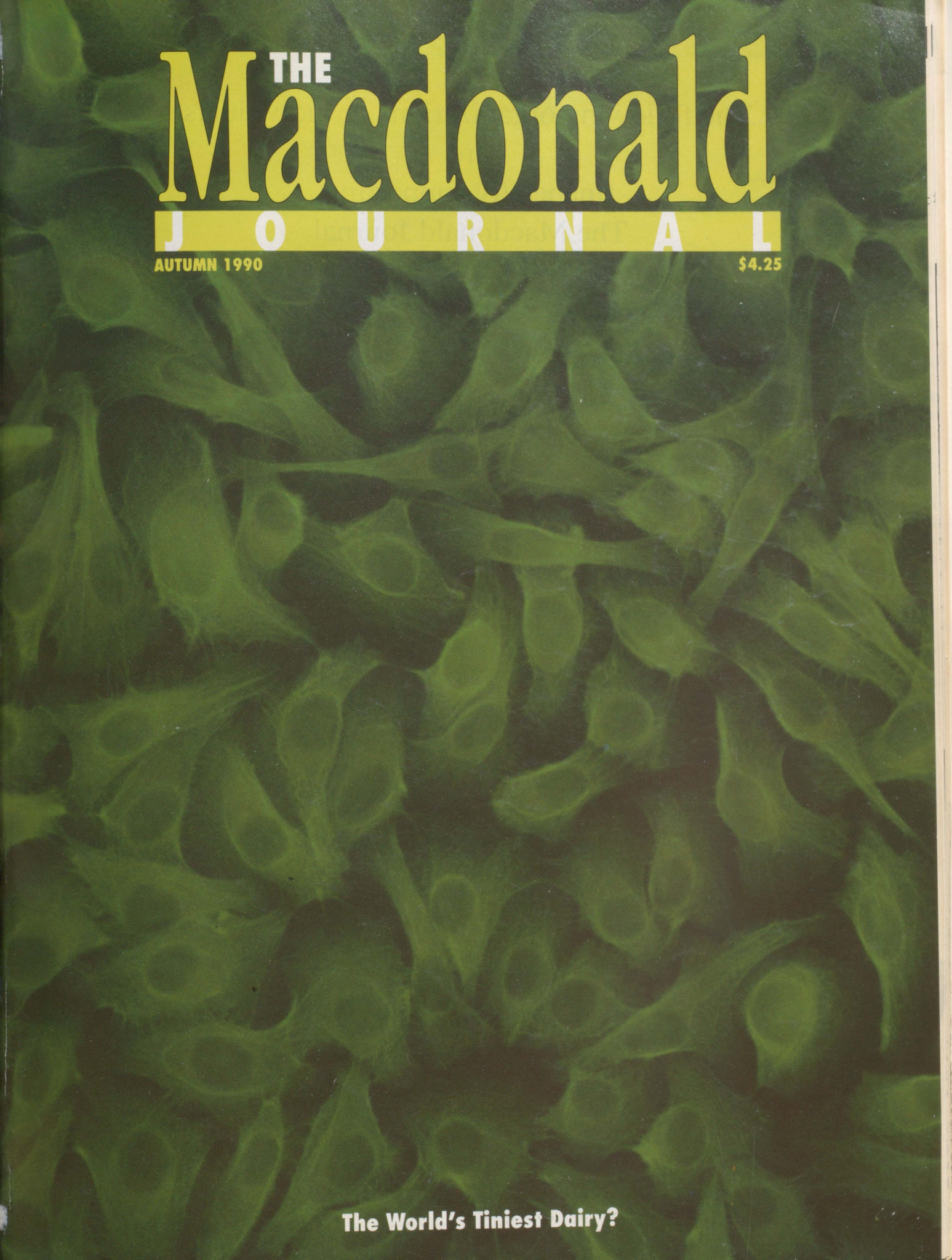




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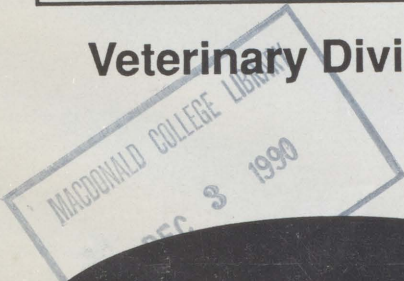
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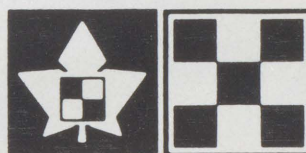
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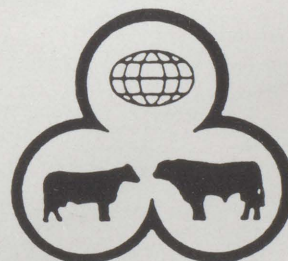
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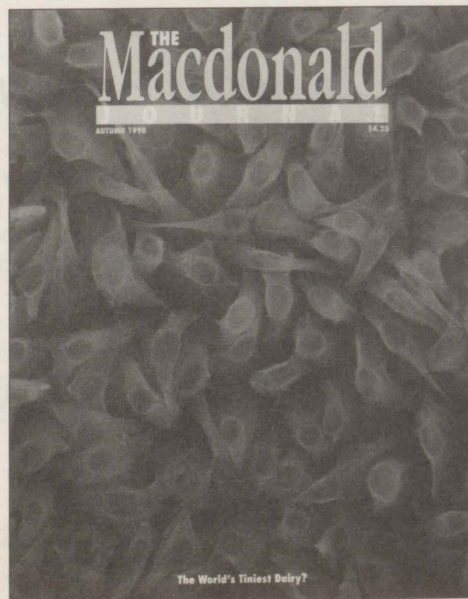
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The QWI

The Quebec Women's Institutes' section of *The Macdonald Journal*, containing information on current activities and up-coming events at the Branch, County, Board, and Provincial levels, may be found on pages 28 to 31.

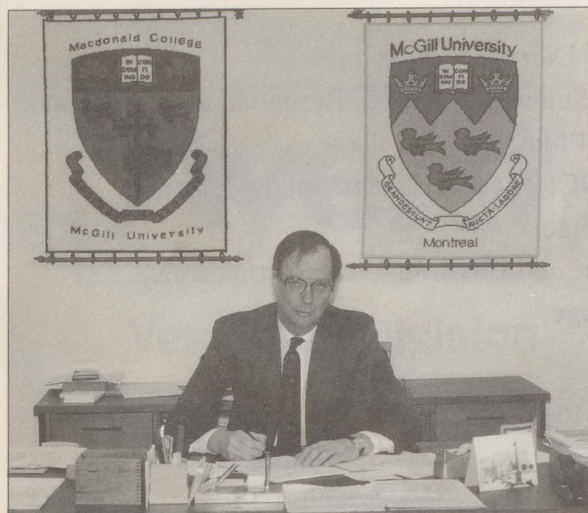
Cover



Our cover is a far cry from a pastoral scene of a herd of cattle grazing in a lush pasture beside a river curving through the countryside. Nonetheless, it depicts one facet of Animal Science research being conducted here at Macdonald. It may possibly be slightly ahead of its time, but it is certainly heading toward the new century. The photo, by Professor Jeffrey Turner, is of the patented Mac-T cell line. Such cells are useful for the study of lactational physiology *in vitro* and will allow for the selection of dairy cows with a natural resistance to disease. Cells stain green as a result of fluorescent antibodies bound to them. (See Professor Turner's article, this issue.) My thanks to Professor Turner, to Henry Garino for helping to co-ordinate the lead articles, and to the staff in the department for their contributions. Thanks also to Gloria Sola for covering the International Dairy Congress for the Journal. Her articles will appear in this and the following issue of the Journal.

From the Dean's Desk

Thirty Years of Progress



Thirty years ago, in 1960, the Department of Animal Science was formed through the merger of the Departments of Animal Husbandry, Poultry Husbandry, Animal Pathology, and Nutrition. From its inception, the department has provided leadership in both undergraduate and postgraduate teaching, research, and contributions to the communities it serves. When the department was formed there was a complete redevelopment of the undergraduate curriculum which set the standard in Canada with respect to the importance of basic sciences in an undergraduate Animal Science curriculum.

In 1966, under the leadership of Dr. John Moxley, the Dairy Herd Analysis Service was established and, from a very modest beginning with a \$25,000 grant from the Dean, George Dion, it has grown to where in 1990 it serves 9,000 dairy farmers in the Province of Quebec, provides data analysis for Atlantic Canada and Saskatchewan, and has an annual operating budget of \$14 million. In cooperation with the Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec (MAPAQ) and the Fédération des Producteurs de lait du Québec, DHAS is being transformed from a university project

into a private corporation in order to better serve its constituents.

In the 1970s, the Department of Animal Science experienced a renewal of the majority of its academic staff and a marked increase in its research activity. The development of a new cattle facility became part of the McGill Advancement Program, McGill's very successful capital campaign of the early 1980s. The project was made possible by the generous leadership support of the late Mr. R. Howard Webster and the R. Howard Webster Foundation who contributed \$2.5 million.

The official opening took place in February 1987. Excitement continues in the department and faculty as we plan for new swine and poultry facilities.

In 1985, through the University/Industry program of the Natural Sciences and Engineering Research Council (NSERC) and in conjunction with Shaver Poultry Breeding Farms of Cambridge, Ontario, the Department was awarded the Shaver-NSERC Chair in Poultry Biotechnology which is held by Dr. Urs Kuhnlein who joined the department in September of that year.

In the 1980s, Quebec's Ministère de l'Éducation initiated a program of "actions structurantes" to provide support to targeted areas of excellence within the Quebec university network. In 1986 the department was awarded an "actions structurantes" grant in dairy science which resulted in a further increase of three faculty members and a significant increase in its research activity.

Dr. Roger B. Buckland
Vice-Principal, Macdonald College,
Dean, Faculty of Agricultural and Environmental Sciences

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Macdonald College and *The Macdonald Journal* are pleased to announce the receipt of a generous gift of \$10,000, from a graduate, to establish *The Macdonald Journal* Endowment Fund.

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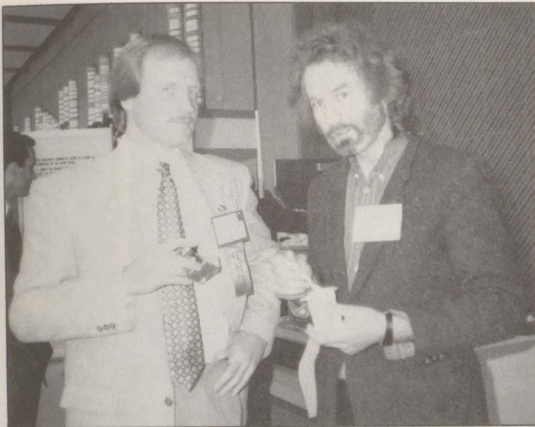
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At the 23rd International Dairy Congress

by Gloria Sola



Harley Nicholson, 1, Manager, Eastern Breeders Inc., discusses the Congress with Flan Hayes, Acting Chairman of the Department of Animal Science.

From October 8 to October 12, 1990, Canada was host to the 23rd International Dairy Congress. Held at the Palais des congrès in Montreal, this was the first time that the Congress had been held in North America. Traditionally this meeting has been held every four years in a European country.

The Congress attracted over 2,000 participants from over 50 countries: African countries such as Botswana, Zimbabwe, Ghana, and Malawi; Asian countries such as India, Korea, Indonesia, and Thailand. Latin America was represented by speakers and attendees from Venezuela, Uruguay, Ecuador, and Nicaragua. As many as 750 Canadians from all across the country attended.

Many aspects of the dairy industry were covered. Some of the subject areas were: Food Safety - Quality Assurance - Legislation; Economics and Marketing; Milk Products; Developing Countries; Environment; Biotechnology; Buffalo, Sheep, and Goats; Milk Analysis, and Promotion and Advertising. The papers were generally 20 minutes in length with a few minutes for questions in between. The job of keeping things running on schedule fell to the chair of each session. And the sessions were on time.

The conference, however, was more than just listening to experts presenting papers from 8:30 to 5:30 every day. There were poster

sessions, dairy displays, and exhibits. Posters? you ask: two rooms full which changed every day. There were abstracts, graphs, diagrams, and pictures of research done on topics concerning dairy processing, biotechnology, breeding, molecular manipulations, and so on. These posters each occupied an area of approximately 4 by 6 feet, and interested readers wandered up and down the aisles stopping in front of those that interested them or caught their eye.

Further along another large hall delegates were enticed by a large centre island containing all manner of cheeses. Along the perimeter walls, milk fountains, yogurts, and ice cream were offered to those who wanted to take a dairy break or had skipped breakfast.

Downstairs, on the first floor, the exhibition hall of the Palais housed industrial ice cream making equipment, milk analyzers and their calibrators, centrifuges, cheese shredders and conveyers. There were milk containers, wrappers, stackers, welders, separators. All the bits needed to measure and control: valves, flow meters, pressure switches. Even better, you could get free samples of frozen yogurts, fruit swizzles, and popsicles.

But not everything was equipment. Services and farm organizations such as Agriculture Canada, The Ayrshire Breeders Association, Saskatchewan Department of Agriculture and Trade, Canadian International Development Agency, CIAQ/SEMEX had booths. Here information, pins, buttons, and chocolates made from goat's milk could be picked up.

Looking at the entire conference you couldn't help but be impressed by the work the eight organizing committees had done. From the moment you walked in and approached the registration booths - seven of them divided up alphabetically by last name - gave your name to the attendant and were handed a nylon "soft briefcase," everything flowed. Inside were your badge, program, list of exhibitors, attendees and, with remarkable foresight,

attached to the case was an umbrella. It poured for the entire five days of the Congress! Close by was the coat check; at another booth you could sign up for any one of the 31 organized tours from fur factories to fall foliage, or attend the evening entertainment and banquet.

Moving up the escalator, at whose foot was a guard checking badges for gate crashers, you arrived at the conference room level. The rooms, with their removeable partitions, can accommodate any size of group. On the registration form there was space for the registrant to check the talks he was planning to attend. Some of the sessions, such as biotechnology, had the equivalent of three rooms. The result: seldom was anyone left standing. There was sitting room for everyone, a remarkable feat considering that most people did not sit in any one room for the entire morning or afternoon but hopped from room to room as their professional interest moved them. Considering there were five sessions going on simultaneously, one had much to choose from.

All sessions had simultaneous translation. The four soundproof booths providing French, Spanish, German, and English services were set up in the back of the rooms with two translators in each. The reason for two is that if the translator should suddenly be taken ill, the partner is ready to jump in immediately and take over. In each blue nylon case was a card which you exchanged for a headset and receiver. You dialled the language of your choice, turned up the volume, plugged yourself in, and imagined yourself in the United Nations. The machines had to be turned in every night, however, to get their batteries recharged.

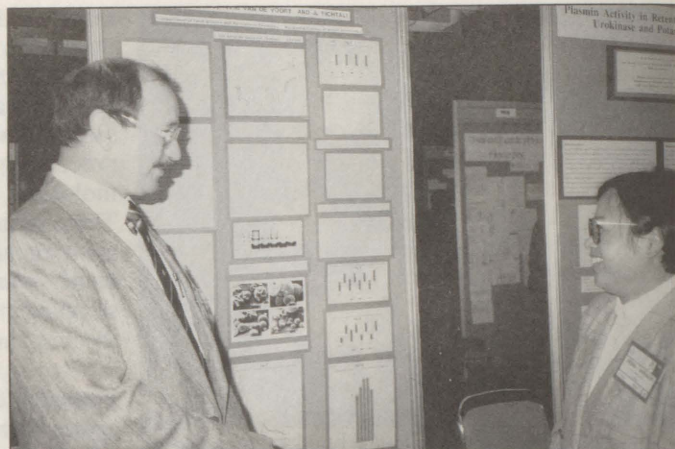
As important as conferences are to keep abreast of new developments, they also provide an excellent place to see people you haven't seen in years and to meet others from distant places. Among the many Macdonald faces were Dr. John Moxley, Emeritus Professor of Animal Science and former PATLQ Director; Bob Moore, Research Director of PATLQ Inc; Animal Science researchers Martin Leonard, Guillermo Gallo, Javier

Buchard, Dr. Humberto Monardes, Animal Science, and Dr. Flan Hayes, acting head of the department. Recently returned to Canada and Mac: Dr. David Klassen was also in attendance as was Wendell Joyce, Farm Director.

Dr. Elliot Block was on the Program Committee and chaired the well-attended biotechnology session, "Facts, Fiction, Perceptions and Misconceptions." Drs Downey and Ng chaired sessions on "New Technologies and Their Use in Breeding Strategies" and "Component and Compositional Alterations of Milk with Biotechnology" respectively. Dr. Fred van de Voort, on sabbatical from his position as Chairman of the Department of Food Science and Agricultural Chemistry, and his student Virginia Barraquio presented a poster on "Functionality of

extruded sodium casinate made from skim milk powder." Bertrand Farmer, of PATLQ Inc., spoke about the service PATLQ provides to Quebec dairy farmers. Former Mac professor, Dr. Brian Kennedy, from the University of Guelph, gave an excellent presentation on "Impact of New Reproduction Methods and Complex Relations on Evaluations."

The next issue of the Journal will highlight some of the many sessions that were presented at the Congress.



Dr. Fred van de Voort and his PhD student Virginia Barraquio in front of their poster presentation.

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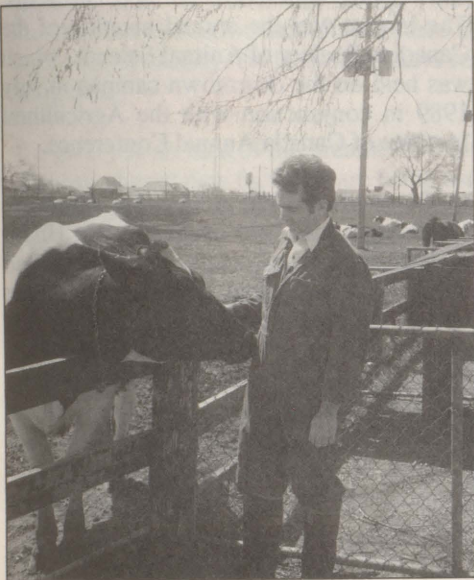
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An Up-date on Animal Science

by H.J. Garino and Staff
Department of Animal Science

The Department of Animal Science continues to have one of the strongest and well balanced teaching, research, and extension programs in the faculty.



Dr. Bruce Downey, Chairman of the Department of Animal Science, at present on sabbatical, on one of his frequent trips to the college farm.

Teaching and Research

The new expertise that the Ministère de l'Enseignement Supérieur et de la Science (MESS) grant and the Natural Sciences and Engineering Research Council (NSERC)-Shaver Chair (See from the Dean's Desk) have brought to the Department, particularly in the field of molecular biology, is providing new opportunities in both teaching and research. As a result, we plan to revise our undergraduate curriculum to provide a more flexible program in addition to the traditional Animal Science and to add some new graduate courses which will more accurately reflect the expertise of departmental staff. Graduate research training is now possible in a variety of disciplines including animal breeding, molecular and reproductive biology, milk biochemistry, and nutrition of domestic animals and poultry. These opportunities are described in more detail in a new colour brochure on graduate studies within the de-

partment which was published earlier this year.

One new initiative was implemented for undergraduate students in the summer of 1990 in the form of an elective work/training "stage" course. Limited initially to cooperation with the feed industry, we anticipate that its popularity will ensure its spread to other sectors.

A tripartite committee with representation from the School of Dietetics and Human Nutrition, the Department of Animal Science, and the McGill Nutrition and Food Science Centre (downtown campus) has been established to coordinate and maintain consistency among the various graduate programs in nutrition. This committee is ensuring that all potential supervisors on both campuses are kept abreast of potential students and apprising Centre members of guidelines for students.

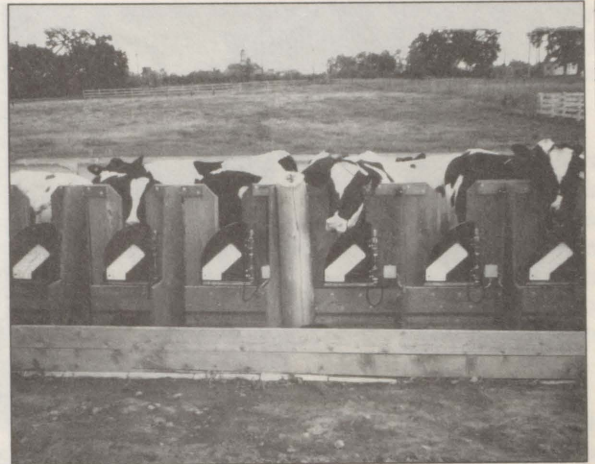
The research activities in the department cover most species of importance in Animal Agri-

Chris Wilson, r, technician in the swine facilities and shepherd, instructs Michael Forand, Dip 1 student doing farm practice at the college farm, on proper sheep feeding techniques. This flock is being used for teaching and demonstration.



culture in the areas of breeding, molecular biology, nutrition, and reproductive physiology.

The research program on beef cattle is led by L. Phillip with the collaboration of H. Garino and focusses on optimizing forage utilization by growing cattle. Current projects deal with



Pasture feeding trial for heifers using electronic individual feeding gates.

efficiency of protein utilization in silage and regulation of appetite control with sheep.

Research on dairy has been dealt with in accompanying articles by E. Block and J. Turner.

A newcomer to the group has been the horse, in particular the Haflinger stallion. Lee

Sanford, in her program of endocrine regulation of seasonal breeders, became interested in knowing more about the seasonal reproductive patterns of stallions

New calf hutches greet visitors to the college farm.





Ralston Purina international nutritionists, who met in Montreal last July, visited our dairy cattle research facilities and enjoyed an evening barbecue. Above: Ron Parker, 1, BSc'74, from Ontario, catches up with Mac news from Professors Leroy Phillip and Sherman Touchburn. Right: Dr. Yu Yu, 1, from Woodstock, Ont., organized the meeting with representatives from about 17 countries, chats with Jim Clark, a professor in Animal Science at the University of Illinois.



remains at a breeding season rate. This "physiological" manipulation of testosterone secretion can be employed over a number of months without interfering with the secretion of other hormones important to testicular function (eg. LH, FSH and prolactin). The passive immunization procedure is simple (rams are given single injections of antiserum

every three to four days), effective within two to three weeks, and not injurious to the health of the animal. Even when immunization is prolonged, testicular size and steroidogenic function will vary normally again with season once immunization ceases. Sanford's es-

tradiol immunoneutralization procedure was developed through research funded by the Medical Research Council and could be used to maintain rams in high fertility beyond the fall breeding season. While testicular regression is not fully prevented when rams are immunized from the time their testes attain maximal size in the height of the breeding season, testosterone secretion is maintained and undoubtedly prevents deterioration in ejaculate quality and the loss of sexual desire. Maintaining these reproductive traits alone into the non breeding season would have a major impact on the reproductive potential and fertility of the ram.

In swine, Bruce Downey (on sabbatical) and Eduardo Chavez carry out research in reproduction and nutrition. B. Downey has a program in follicular development, ovulation, and fertilization of sows and gilts whereas E. Chavez has a program in trace mineral nutrition during reproduction as well as the nutritive value of soybeans prepared by different processing methods.

which might help to develop more effective breeding strategies in this species.

Poultry research includes the programs of U. Kuhnlein on molecular genetics aimed at identifying and cloning genes which affect production traits, Paul Lague's on reproduction and management of broilers, layers, and roasters, and Sherman Touchburn's research on energy, dietary fat and genetics-nutrition interactions.

Sheep are used as models for ruminant nutrition (L. Phillip and H. Garino) and reproduction studies (L. Sanford). A most interesting project of Sanford's currently under investigation deals with the enhancement of ram fertility in the non breeding season by means of estradiol immunization.

Estradiol in the blood circulation of rams has a negative influence on testosterone secretion. When intact rams are passively immunized with a low titre of antibody against estradiol, some of this inhibition is removed and their testosterone secretion either increases to or

Extension Activities

Members of staff (both academic and non-academic) participated in the organization and hosting of three recent special events. The largest was the annual meeting of the Canadian Society of Animal Science, which was held on the downtown campus in July 1989 in conjunction with the Agricultural Institute of Canada Annual Conference.

In September 1990 a one-day Nutrition Conference was held at the Airport Hilton with the support and collaboration of the feed industry. In early June 1990 the department hosted the three-day Expert Committee on Animal Nutrition (ECAN) meetings which were attended by some 60 delegates from across Canada. With the 23rd International Dairy Congress scheduled for the Palais des Congrès in Montreal in October 1990, our participation in such educational events continues.

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Dairy Cattle Research at Macdonald College

by Professor Elliot Block
Department of Animal Science

I believe that the last time I wrote in The Macdonald Journal we had recently moved into our new cattle teaching and research complex. We had some ongoing trials at that time but now we are in full swing with so much research that we can almost make use of a second facility. (Is Dean Buckland reading this?)

To give you an idea of the breadth of topics that our almost new facilities are being used for, I would like to describe in this article some of the dairy cattle research that is underway or recently completed. Of course, this is not meant to neglect other areas of dairy research within our dairy group. Our milk analysis group is working on milk chemistry for manufacturing purposes and there is a relationship between this group and our geneticists in defining the heritability (genetic transmission) of certain traits of milk chemistry, such as protein. Our geneticists are working within their own rights in better definition of genetic merit of cows and, of course, there is our biotechnology group. Some of their research is discussed in another article in this issue of the Journal. Staff from the department involved in dairy research include E. Block, R. Cue, B. Downey, G. Gallo, F. Hayes, U. Kuhnlein, U. Monardes, K. Ng, G. Robitaille, J. Turner, and D. Zadworny.

The overall objective in the cattle complex is to conduct research leading to the understanding of the dairy cow herself. In other words we rely heavily upon our fundamental scientists to tell us how the cells in animals work alone and together and how a specific organ or tissue functions and responds to stimuli. With this knowledge, we can develop theories and hypotheses as to how to improve the feeding, management and/or environment for the animal with the objective of improving or optimizing production and reproduction performance, growth and the health and well-being of cattle. These hypotheses are then tested in the research complex. The specific research projects are too numerous to cite here; therefore, I will highlight some of the larger programs.



Dairy research in the cattle teaching and research complex has grown tremendously since this photo was taken of Elliot Block and Patti Ward placing the first research animal in the new facilities.

I. Nutrition-Reproduction Relationships in Lactating Cows

General projects are being conducted with a few post-graduates and researchers to understand why high-producing cows in early lactation have difficulty conceiving. The cow is losing quite a bit of body weight because her milk yield surpasses her ability to consume feed. The projects being conducted are:

1. Effects of body weight at calving and weight loss in early lactation on the behavioural signs of heat (estrus).
2. Quantification of reproductive hormones stored in body fat and the impact of these hormones on reproduction when the body fat is mobilized for lactation.
3. Direct effect of mobilized body fat and of other nutrients on the functions of the ovaries (*in vitro*).

The information collected can be used to develop feeding or management strategies to improve the reproduction performance of these cows.

II. Mechanism of Action of Bovine Somatotropin (BST)

Regular readers of this journal know that we have been investigating the use of BST injections to increase milk yield. Our results have shown that BST increases milk by 4 to 6 kg/day after peak yield without altering milk

composition or compromising health. Further, the increase in milk only occurs if feeding and management are excellent; if nothing at all occurs when BST is given.

One of our results was that the BST-treated animals have more difficulty conceiving in early lactation. We feel that this is more related to high production, as with any other high-producing cow, than to BST itself. In actuality, this is how the program on nutrition-reproduction described earlier, came into being.

Our interests now lie in describing how this BST supplement actually works to increase milk yield, because understanding this phenomenon will allow us to understand how cows make milk!! We have already described (with our biotech group) how BST prolongs the life of the mammary glands for a lactation resulting in the potential for more persistent production. Current trials are being conducted to determine how BST allows the nutrients to reach the mammary glands to realize this production potential.



Various feed trials may be easily undertaken in the new facilities.

Other trials are being conducted to determine if overall efficiency of the cow changes with BST use and to determine how to optimize the response to BST via nutrition (i.e. energy and protein density of diets, fibre levels, etc.). Whether BST becomes a commercial reality or not is of no significance, for this work has taught us more about cows in the last eight

years than the previous 20 years have shown us.

III. Stress Physiology in Dairy Cows

Anyone who has worked with any lactating animal (humans included) realizes that stress, pain, or discomfort inhibits milk yield. This program is aimed at defining the stresses involved in animal management and to minimize or eliminate them.

The program has begun in the form of a contract from Hydro-Quebec to investigate the effects of electronic and magnetic fields on cows caused by high tension power lines. We will be investigating effects of these fields on production, feed intake, hormonal profiles, reproductive hormones, blood chemistry, and behaviour of cows. We will be exposing cows to the same intensity of electro-magnetic fields that would exist on a pasture under a high-tension power line. This contract, although short-term in duration (two years), is viewed favourably since it serves as an impetus to launch a larger program in stress physiology, which is a poorly understood area in dairy production.

IV. Acid-base Status in Dairy Cows

This program began a few years ago with the purpose of alleviating the disease "milk fever," which is caused by low blood calcium. We developed a mineral nutrition program that helped the animal better control her acid and alkali production in blood, thereby aiding her in making a smooth transition from the dry period to lactation.

As a result of this work, we are now following through with this concept in lactation whereby we can feed various minerals to help the animal buffer or neutralize excess acid production due to lactation, thereby improving feed intake, health, and overall performance of the cow.

Related to this, we are also beginning to investigate potential acid-base problems in cows caused by poor water quality. In Quebec we have regions with acid water and

others with alkaline water. A growing problem appears to be defining how these water quality problems affect the animal and how to correct the problems.

Also related to this program is work conducted in sheep and steers investigating effects of acid-base balance on efficient protein utilization and vice-versa. Urine production costs the animal energy. The goals of this research are to define methods to minimize urea (and urine) production to maximize protein deposition in growing animals.

The four areas above comprise the heaviest use of our facilities. However, you should be aware that other shorter-term trials are being conducted, both under government grants and private contracts. The listing below will give you an idea as to the types of trials:

1. Use of silage additives to improve fermentation in the silo.
2. Relationship of forage fibre particle size to rumination and digestion of rations.
3. Optimizing bypass protein for heifer growth.
4. Potential use of enzymes in rations for lactating cows to improve ration digestibility.

5. Use of yeast cultures to improve rumen fermentation.

I hope that this brief summary has highlighted the varied programs sufficiently to give you an understanding of our work. As always, you are more than welcome to visit with us and allow us to share our findings with you.



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Microcomputers on the Farm

by D. Marchand and R.K. Moore
PATLQ Inc.

A project was initiated in 1987 with the financial support of Agriculture Canada to study the feasibility of using portable computers at the farm on test day to collect the input information and generate on farm reports. The PATLQ (DHAS) field supervisor enters the data normally written on the barn sheets, edits the data with reference to values downloaded from the previous test, and then generates management reports and feeding recommendations. With the reports produced at the farm, the PATLQ field staff have the opportunity of checking the input data and discussing the output recommendations with the dairymen immediately.

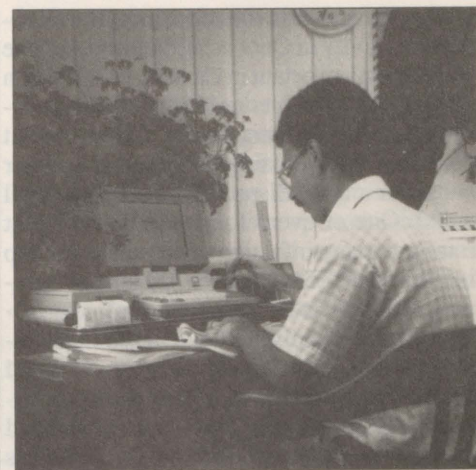
The three participating field supervisors adapted rapidly to the computer system to the point where the number of participating herds was increased from 60 to 240 at their request. They also participated actively with suggestions to improve the program. The time required for completing the test on the farm using the portable computer is very close to that spent using the conventional system. It was demonstrated that incorporating a method of data collection during the milking could reduce the time required for data collection.

The reaction of the dairymen receiving the additional services available was very posi-

tive. Eighty-four per cent of the producers that responded to a questionnaire indicated that they would be very disappointed to see the project end and the services discontinued. Eighty-nine per cent of the dairymen estimated that the services available from the supervisor equipped with a portable computer had a positive financial impact on their enterprise. Fifty-six per cent of the dairymen felt that they were receiving more technical advice from their supervisor since being equipped with a computer. Twelve per cent more producers evaluated the work and advice provided by the supervisor as excellent after the project started as compared to when they did not have a computer.

The results in Table 1 show that the initial 45 Holstein herds on this project showed an increase in annual income over feed cost of \$48 per cow more than Holstein herds in the same county receiving the conventional service. This would represent an additional \$1,746 per year in these herds.

This project has confirmed that it is possible to integrate a portable computer into the daily routine of the PATLQ supervisor. In addition the services available on test day are well received by the dairymen. As a result, the implications of having all PATLQ supervi-



Raymond Metayer, Field Supervisor, uses a computer to make reports right on the farm. What could be faster?

sors equipped with a portable computer are being investigated.

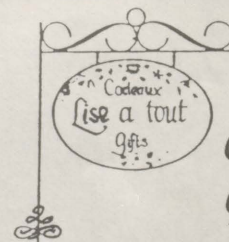
In March 1990 the board of directors of PATLQ Inc. gave its approval for a pilot project allowing 30 supervisors to be equipped with a portable computer. This phase involves more than 1,800 herds in two regions of Quebec.

It is still too soon to draw any conclusions on the acceptance of this new service by the dairymen. However, our preliminary consultation is very positive.

The challenge is to offer a computerized service on the farm while keeping the costs of milk recording to a minimum.

Table 1. Annual performance of Holstein herds on PATLQ in Kamouraska and Riviere-du-Loup counties.

	45 herds with micro-computer service			253 herds with usual PATLQ service		
	1988	1989	Difference	1988	1989	Difference
#cows	33.9	35.6	+1.75	33.8	35.2	+1.4
Milk/cow, kg	6160	6434	+274	6269	6431	+162
Milk revenue per cow, \$	2435	2663	+228	2459	2614	+155
Feed cost per cow, \$	778	866	+88	812	875	+63
Rev-feed cost per cow, \$	1657	1797	+140	1647	1739	+92



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Natural Disease Resistance:

Back to Basics on Mastitis

by Professors Jeffrey D. Turner and Humberto G. Monardes
Department of Animal Science

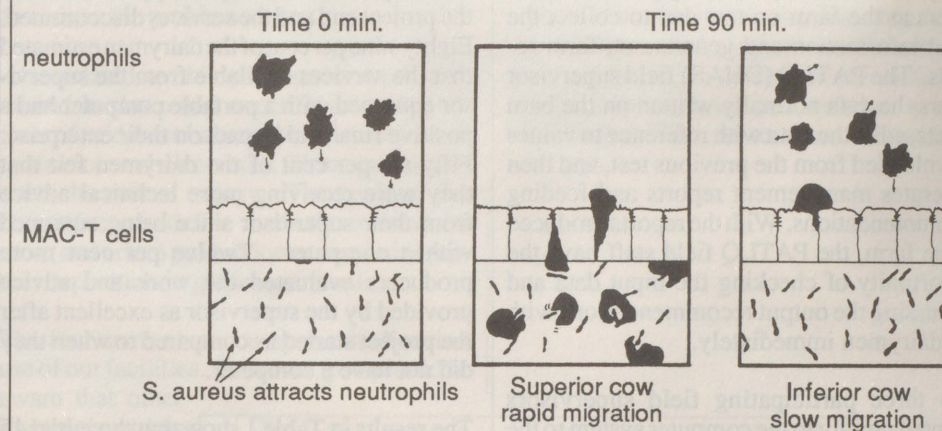
Milk production is the most important economic activity in Quebec agriculture and one of the most important in Canada. (\$2.9 billion in farm cash receipts in 1988.) Mastitis continues to be the most costly and important disease affecting dairy cattle and is a major cause for animal disposal (10 per cent of all culls). One of every four cows has a latent intramammary infection which causes a drop in milk yield of some 200-700 kg per lactation. This translates into economic losses of >\$1 billion annually. Are we in the dairy industry losing this fight? In spite of good health management practices, monthly somatic cell counts, and expensive clinical and preventive treatment with antibiotics, this problem is not going away. Under these conditions, any approach to improve the situation would have an impact on the Canadian dairy sector.

Our research program is dedicated to the creation of assays which will allow us to select dairy cows which naturally resist mastitic infection. This research philosophy is consistent with that of an ever-growing segment of our society and academic groups who support efforts to develop environmentally sound agricultural practices. These efforts are also consistent with the focus of our faculty and our recent name change to the "Faculty of Agricultural and Environmental Sciences."



Professor Jeffrey Turner checks a cow's udder at the college farm.

Fig. 1 Neutrophil Migration Assay

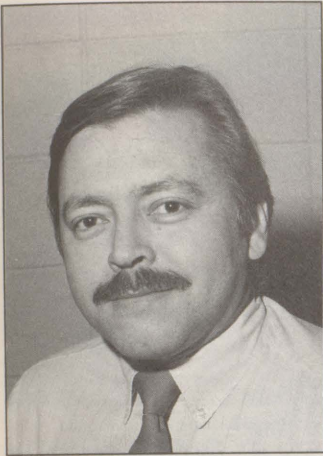


To better understand the nature of this work it is important to understand some of the salient biology. Milk is produced by a single cell type found within the udder. These cells are called secretory epithelial cells, and are arranged in clusters connected by small ducts. Milk flows down these ducts into the cistern, where it is stored until the next milking. (This arrangement is quite different from the human and rodents where the ducts communicate directly with the exterior.) In both cases the milk is removed through a narrow duct in the teat. Here is the problem. For through this duct, called the streak canal, bacteria can enter from the environment into the cistern. The resulting inflammatory reaction is the hallmark of mastitic disease.

Current management practices undertake to minimize this contamination. Each and every udder of every Canadian dairy cow is washed prior to milking and the teats dipped in an appropriate cleanser after milking. Despite these precautions, mastitis remains the

most prevalent mammary disease in our dairy industry. We must point out clearly that milk from cows with mastitis or under treatment for mastitis cannot be sold. As such these animals represent a direct economic loss to the farmer.

Milk contains several components which are antimicrobial. These include cells (neutrophils, macrophages, and lymphocytes) and whey proteins which inhibit bacterial growth or kill bacteria directly. Our line of research focusses on the cellular immune response provided by the neutrophils. These cells are responsible for taking up bacteria and killing them. Neutrophils are a natural component of milk from healthy cows and are found at a concentration of some 200,000 per ml milk. When bacteria are growing in the milk, many more neutrophils leave the blood and move into the milk. This cellular migration is called diapedesis. Once in the milk neutrophils take up bacteria and kill them using a series of reactions culminating with hydrogen peroxide production. The overall bactericidal capacity of this neutrophil system will depend on three factors: 1) rate of diapedesis into milk, 2) rate of uptake of bacteria, and 3) killing ability. In all cases, mention is made to "rate." This is important



Professor Humberto Monardes

as bacteria grow at a rate that is difficult to comprehend. *Staphylococcus aureus*, a major mastitis pathogen can double its population every 20 minutes if allowed to proliferate.

At this rate a single bacterium would produce 16,777,216 "offspring" in a 24-hour period! Obviously, a very effective bacterial killing mechanism is required within the mammary gland.

Quite clearly selection programs wish to breed for natural mastitis disease resistance. The major problem until now was what parameter do you use as a basis for selection. Our research program is focussing on the three parameters above. The first deals with diapedesis. The faster rate at which neutrophils leave the blood and migrate into the milk, the sooner they can begin defending the mammary gland against infection. Figure 1 shows our system. It is unique in that it uses a bovine mammary epithelial cell line which mimics normal mammary function. These cells named MAC-T are grown in cell culture (for more details see *The Macdonald Journal*, May 1990) and form a sheet of epithelial cells which can make milk in culture. Neutrophils isolated from different cows can be tested directly to determine how long it takes for them to cross the barrier and begin killing bacteria on the other side. We are able to quantitate this with a microscope or by electrical measurements. In the latter case, each neutrophil leaves a tiny hole through which electric current passes (this technique is commonly used to detect the presence of tiny holes in condoms). Results from these tests, in conjunction with population studies, will show the genetic component of diapedesis ability of dairy cow neutrophils.

The ability of neutrophils to take up "foreign bodies" is readily measured using a fluorescence microscope. Tiny latex heads are coated with fluorescent dye then placed in solution with neutrophils from different cows. The number of beads taken up is a direct measure of the ability to uptake foreign material. A variation of this technique is used to determine the bacterial killing ability of each cow's neutrophils. In this case *S. aureus* bacteria are placed in solution with the neutrophils for 90 minutes. The bacteria are then stained with a dye called acridine orange which will stain live bacteria green and dead bacteria red. The number dead (red) divided by the total number

(red and green) gives a measure of bacterial killing ability.

Our preliminary results and those of others indicate that this approach will allow the assessment of the genetic ability to resist mastitis. Cows, whose neutrophils migrate rapidly into the milk, take up and kill bacteria rapidly, can be predicted to have a more aggressive immune system. It is this type of genetics for which we would like to see more consideration in the future. We firmly believe that this approach will significantly decrease the incidence and severity of mastitis in dairy cows of tomorrow.

Research with the Haflinger

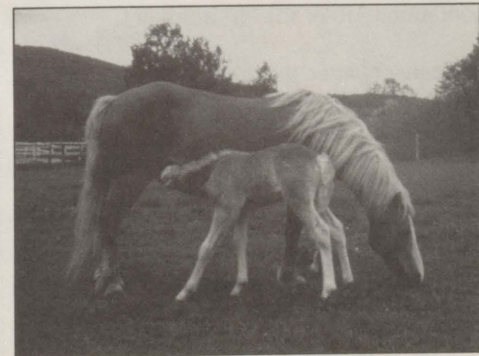
In his up-date on the Department of Animal Science, Henry Garino mentions the research being undertaken by Dr. Lee Sanford with the Haflinger horse. This research, as with so many other undertakings, underlines the support and interest given Macdonald College by members of the community, in this instance Mr. Joseph Kuchar of Waldeck U Lesa Farm in La Conception, Quebec.

Mr. Kuchar breeds Haflinger horses at his beautiful home in the Laurentians. These animals, that originated in Austria, are handsome, small horses known for their excellent disposition and versatility. They are excellent riding horses and can also be used as a pack or pulling animal.



Christiane Roy with Haflinger Stallion, Stolz, at the Waldeck U Lesa Farm.

As a third-year project, Christiane Roy, BSc(Agr)'90, wanted to work under Dr. Lee Sanford's supervision with horses in the area of endocrinology. The study looked at the seasonality in luteinizing hormone (LH) and testosterone in the Haflinger stallion. Three Haflinger stallions were used in the study, the first seasonal endocrine study done on stallions in southern Quebec and of the Haflinger breed. The results to date are preliminary; however knowing more about the seasonal reproductive patterns of stallions in our locale would enable us to develop more effective breeding strategies and maximize the reproductive potential of the breeding herd.



A Haflinger mare and foal belonging to Joseph Kuchar of La Conception, Quebec.

Ace: Animal, Consumer, and Environmentally Friendly

Professor Sherman Touchburn, a poultry nutritionist in the Department of Animal Science, has been aware for some time that there have been important changes in emphasis in the past few years both in research and in animal production. Certainly concern for the environment is as important to poultry scientists and producers as to others, and the growing concern of consumers for healthy, nutritious products has not gone unnoticed. Animals, consumers, and the environment have been hot topics at recent animal feed and nutrition conferences: they are also timely topics for the Journal and Professor Touchburn recently discussed them and some of his research with Hazel Clarke, Editor of the Journal. Questions appear in italics.

Let's start with some current research trends.

We are constantly aiming at better growth, better feed efficiency, and better production through improved nutrition management. We are trying to improve these while protecting the environment by reducing the amount of pollution coming from animals. Our present emphasis is a refinement of what we have been doing all along because as we learn the requirements of the animal more precisely, we can better meet them through the diet. For example, protein is made up of amino acids, and we are getting to know the absolute requirement of the animal at different stages of growth and production for these amino acids. If we can more carefully match the animals' needs, then efficiency will improve and there will be less waste nitrogen put out in the feces and the urine. This means less contamination of the environment.

We can enhance the digestibility of another nutrient - phosphorus. A lot of phosphorus in animal feeds comes from plant material in which the phosphorus is bound up in what is called phytic acid. There are a number of enzymes on the market that are derived mostly from moulds and fungi which can digest this phytic acid and release the phosphorus rendering it available to the animal for digestion and absorption. This means we can add less phosphorus to the diet and it also means that the animal will be excreting less phosphorus

into the environment. Since it is one of the more expensive ingredients, this has the additional benefit of reducing the feed cost.

Last spring nutritionists from across Canada came to Macdonald under the auspices of Agriculture Canada to attend the Expert Committee on Animal Nutrition meetings. The poultry nutrition group recommended that the goal for the year 2000 would be to reduce by 40 per cent the output by poultry of nitrogen and phosphorus. This would mean quite a reduction in pollution by animals of the environment.

Would there still be a profit for the producer?

The financial profit would be parallel with the improved utilization. The more efficient use of the material going into the animal means less having to go in, which also means less going out. There is a beneficial effect economically as well as environmentally.

Is there also a benefit for the consumer?

In general, when we improve the nutrient utilization, we very often find that we have also improved the carcass yield. We have improved, for example, the amount of edible protein as opposed to fat which is now being considered as a negative. Yes, it also has a beneficial effect for the consumer.

When you mention the consumer I think of the theme of our Macdonald Nutrition Conference for the Feed Industry, held on September 27, 1990, which was "The Impact of Nutrition on Product Quality." One of the speakers on the program used the acronym ACE in his title, and he defined it as Designing Tomorrow's Feeding Program to be Friendly to the Animal, the Consumer, and the Environment. We want the animal to be satisfied with the feed that it is getting. The



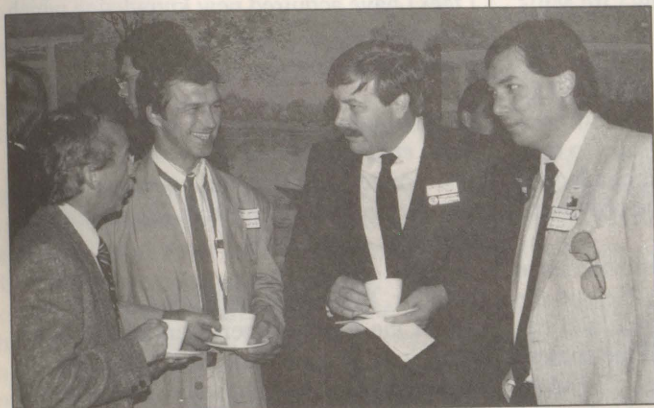
Henry Garino, l, co-organizer of the Macdonald Nutrition Conference for the Feed Industry and the day's speakers, l to r, Dr. Sherman Touchburn, Dr. Elizabeth Lammond, Victor Wagemans, Dr. Jennifer Aalhus, Dr. Pearce Lyons, and Dr. Essi Evans.

product should be what the consumer is looking for - in this case more protein and less fat - and, as we have already discussed, the enhancement of the environment by reducing the pollutant output by the animal.

In the latter respect a couple of topics are becoming very popular for research. One is probiotics, as opposed to antibiotics, which are compounds added to the feed to enhance the utilization of the ingredients in the feed in as yet not clearly defined mechanisms. One of the products being used is yeast which provides nutrients that are ultimately digested by the animal. While the yeast is still alive in the intestinal mix it seemingly has some beneficial effects on combatting negative organisms in the gut as well as perhaps enhancing the digestibility of some of the other nutrients. Yeast seems to create the right environment in the digestive tract and has its positive effect.

Many people are concerned about antibiotics. They are worried about consuming residues in the animal tissue from animal feed. Most antibiotics inhibit pathogenic microorganisms that are present in the gut or which might compete with the host for nutrients such as vitamins or amino acids. Some actually produce toxins which cause damage to the wall of the gut causing thickening of the intestinal wall in a normal growing situation, and this is when antibiotics are effective. If the birds

are being raised in a germ-free environment where there are no microorganisms, then the intestinal wall is much thinner and operates more efficiently.



MAPAQ's Robet Filion and Réjean Leduc in conversation with Wendell Joyce, Macdonald College Farm Director, and Brian Ouimet. Brian, a '78 graduate from Macdonald, recently joined Alltech, a biotechnology company. He is working out of the company's Canadian office in St-Eustache, Que. He is travelling through eastern Canada - from Ottawa to the Maritimes and is thoroughly enjoying his new job.

Virginiamycin, which I have been working with, is an antibiotic that doesn't get absorbed into the tissues of the animal. It stays in the lumen of the intestine and enhances the utilization of carbohydrate, leaving more carbohydrate available to the animal. It also reduces the destruction by microorganisms in the gut of some of the amino acids, especially lysine. These two beneficial effects allow a leaner meat carcass than when the antibiotic is not present.

Another area that we are working in is also aimed at producing leaner meat. We can select genetically for fatness or leanness. Here at Macdonald College I have two lines of birds that have been selected for several generations. One line is twice as fat as the other one. We can change the fatness or leanness by genetic selection, but the industry has been slow to apply this knowledge because the pressure is still on among the primary breeders to select mainly for growth rate.

At Macdonald, we can select for fatness and leanness without having to kill the birds to find out how fat or how lean they are by measuring a couple of blood parameters that

give very good promise of being indirect indicators of fatness: namely the blood plasma levels of glucose or phosphorus. We reported on these at the Macdonald Nutrition conference and suggested them as indicators for selection by the primary breeding industry. They could then select birds for lean meat production as opposed to fat production.

Thoughts on the 1990 Macdonald Nutrition Conference

One of the speakers for the 1990 Macdonald Nutrition Conference for the Feed Industry, held in September, was Dr. Pearse Lyons, who is Presi-

dent of Alltech Biotechnology Centre in Kentucky. This company is aiming at harnessing biotechnology. They have a number of enzyme products that go into feed, for example, which they feel are effective in enhancing nutrient utilization by animals.

Dr. Essi Evans was our keynote speaker. She is Manager of Nutrition at Canada Packers' Shur-Gain Division. Her speech was about nutrition and its impact on product quality.

We recognize that the consumer is becoming more and more concerned about the quality of animal products and their effect on health and that was the reason for choosing this theme this year.

Dr. Elizabeth Larmond, from Winnipeg, has done a great deal on evaluating the quality of animal products as a result of various nutritional treatments. She is a real expert on measuring quality in meats, particularly from the consumer's point of view.

It is to our advantage to recognize that the consumer is becoming better informed and better educated about good nutrition. We had better be concerned about the quality of the products that we produce. In the past production agriculture was mainly concerned with the volume and the efficiency of production. Those days are gone forever. We have



Martin Leonard, who is completing his PhD studies at Macdonald, greets MSc '86 grad Hélène Leclerc.

to be concerned about the quality of the product we are producing and measure this quality with the consumer in mind. We have never really ignored the environment, but we haven't taken a positive approach. Now we have to.



Animal Science's Henry Garino, I, and Elliot Block welcome Hélène Leclerc to the one-day conference.

Macdonald-Industry Stage



Animal Science students get re-acquainted with two of their stage supervisors, l to r, Joel Cormier, Charles Lapointe, Purina, Bill Revington, New Life Mills, and Alex Venne.

An exciting new concept was undertaken this year in the Department of Animal Science: an idea that students, staff, and members of agribusiness hope will continue and expand. Four students - Joel Cormier, Alex Venne, Dominique Belanger and Johanne Cousineau spent the summer working for Ralston Purina and New Life Mills. They received a salary but, more importantly they each received three academic credits and hands-on experience. At the recent Macdonald Nutrition Conference for the Feed Industry held in Dorval, Hazel Clarke, Editor of the Journal, talked with two of the students, representatives from Purina and New Life Mills, and the students' Academic Advisor, Professor Sherman Touchburn.

Alex Venne worked with New Life Mills in Ontario; the other three students were with Purina. They did a variety of jobs and gained a wealth of knowledge and experience. Alex,

who came to Macdonald from St-Felix de Valois, said he spent the first 10 weeks travelling throughout western Ontario - Owen Sound, Sarnia, the Niagara Peninsula, and Cambridge, the location for New Life Mills' head office.

"The first weeks I toured the company," Alex said, "I asked questions, worked in different departments - from nutrition to sales to marketing. I spent the last four weeks conducting a survey in the eastern part of the province."

Alex said he thought the hands-on experience for credit was a very good idea. He said the whole approach was very flexible and demanded discipline on the part of the student to get the most out of the project. "I had an excellent supervisor in Keith Schaefer and also appreciated all the help given me by Dr. Bill Revington at New Life Mills. Mr. Schaefer and Dr. Revington are both nutritionists."

Joel Cormier was one of the three students at Purina. Joel, who comes from Rawdon, said that he first worked in the LaSalle feed mill getting to know how the products were made, taking courses in technical sales, and getting background knowledge before going out into the field. He then spent the remainder of his 14 weeks around the Three Rivers area working with Daniel Gauthier.

"I think it would be great if more companies would participate in the stage," he said. "The students could get a great deal of experience.

We learned a lot. We sometimes wonder if the lectures we receive are relevant to the real world. They are! We used what we learned in the classroom. Now that the stage is over, I feel I have acquired new knowledge which I can compare with what I learn in the courses I have yet to take."

Dr. Revington said that the staff in New Life Mills enjoyed having Alex with them. He also pointed out that the company gained, too. "We got new ideas from Alex and appreciated his suggestions."

Both Dr. Revington and Serge Deschamps, one of the Purina supervisors of the Stage, think it is an excellent idea - both for the students and for the companies. They certainly would like to see it continue.

"I would like to see this idea expand to include more students from different disciplines and more companies in agribusiness," Charles Lapointe, Quebec General Manager for Purina said. "I can see it becoming an important part of a student's education and, at the same time, I think learning on the job is also good for agribusiness.

Professor Touchburn summed up the Macdonald-Industry Stage concept this way: "This experience for four students signals the beginning of what we hope will be a permanent component of our program in Animal Science."

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Focus Environment

Cattle Production - Another viewpoint

by Henry Garino and Leroy Phillip
Department of Animal Science

Animal agriculture has come under close scrutiny by the public because people have become sensitized to technological and production practices that have an impact on the environment. The farming of animals is also seen as an infringement upon animal rights and animal welfare. Now that animal agriculture is getting over the "cholesterol scare" of the early '80s, it faces another assault.

These public concerns are, of course, serious and need to be addressed, but often the public's outrage is out of proportion to the gravity of the act that precipitated the outrage. For example, at a recent Earth Day event we witnessed an exhibition in which cattle were being portrayed as polluters of the environment, producers of unhealthy, high-cholesterol products, and gobblers of chemicals and grain, with an energetic inefficiency of 10 pounds of grain: one pound of product. After overcoming the shock of exposure to this high degree of ignorance and misinformation, we were able to set the records straight for the apologetic attendant at the booth; however, scores of people must have already gobbled up the erroneous message, giving credence to the statement by Karen Davidson of Cattlemen Magazine: "For every credibility gap there is a gullibility fill."

The production of cattle has become a special target because they are seen to emit methane, a "greenhouse" gas and to consume grain, the production of which contributes to soil degradation. Cattle, it is also said, produce copious quantities of manure, which is not only offensive to the home buyer encroaching on disappearing farmland, but also contributes to ground water pollution. When cattle production is marketed in this manner, "outrage factors" interact to produce public protest. Let us, present another viewpoint.

Straight Talk

The reality, according to Environment Canada, is that carbon dioxide is the major component of greenhouse gases (50 per cent); methane accounts for 12-18 per cent. The largest source of methane is not from cattle but from mining, oil exploration, burning of

vegetation, and natural emissions from swamps, marshes, and rice paddies. It is estimated that North American beef¹ cattle contribute less than 0.6 per cent to global methane production. Our readers should also remember that the recent popularity of high fibre diets does place humans among those animals that produce methane as a result of microbial activity in the hindgut; are we prepared to count our contribution (however small) to "greenhouse" gasses as the world population increases and the popularity of high fibre diets rises?

Methane produced in the stomach of cattle accounts for about eight per cent of the food energy ingested by the animal; however, for this price, ruminants can convert forages into high quality food protein for humans, without competing with them for a source of food input. Grain feeding is not a required input for ruminant production; in fact, dedicated efforts in forage research have now made it possible to cause a Holstein dairy cow to produce up to 26 kg of milk per day (40 kg with supplemental grain feeding) with high quality forage.

The production of forage for cattle provides effective land cover and prevents soil erosion. Rather than being at variance with environmental protection, cattle production based on forage is "in step" with resource conservation. This has long been recognized, and it is for this reason that much more land used to be devoted to pasturing of cattle. Urban pressure on land usage and the consumer's desire for low cost food (now representing in Canada only 12 per cent of disposable income) have forced producers into high density rearing of cattle with images of animals "gobbling grain and chemicals" and polluting the environment with manure.

Farm manure and "runoff" from feedlots do represent sources of ground water pollution, but cattle managers and animal scientists are not insensitive to this issue. The management of manure has been tightly regulated by environmental agencies for the past decade. The guidelines for such effective regulation are the product of dedicated efforts of animal

scientists, engineers, and producers. Furthermore, manure has now become "big business," being sold by the "truck load" and by the bag for urban gardening and landscaping. Present trends in "sustainable production" of vegetables require composted manure, which is a replacement for chemical fertilizers. These practices of manure recycling would reduce the risk of manure being a polluter.

There is the issue of the healthfulness and safety of animal products, but the presence of tannins, phytates, and lectins in plant foods are no less of a nutritional concern than is cholesterol. It really depends on who is making the case. Let us not forget that milk yields yogurt and specialty cheeses which are now regarded as being quite healthful and are in popular demand. The production of beef gives rise to high quality food rich in essential amino acids, vitamin B12 and the essential minerals, iron, and zinc with superior bioavailability.

Cattle production has played an important role in resource development and conservation both nationally and globally. Nevertheless, those engaged in the production of food of animal origin must continue to show sensitivity towards the environment with emphasis on sustainable development. In the final analysis though, the consumer must pay the bill. As he/she rightly insists on more "sustainable development," he/she must bear the responsibility for the economic implications of sustainable development. Without such public commitment that "catch phrase" looks more and more like an oxymoron.

¹Beef Information Centre



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McGill International

A 10th Anniversary Celebration

by Hazel M. Clarke



Staff of McGill International were pleased with the day's activities: l to r, Ginette Lamontagne, Associate Director, Joe Zackon, Special Projects Officer, Janie Kwan, Accounting Clerk, Linda Anderson, Administrative Officer, and Dr. Eugene Donefer, Director.

Professors Jim Smith, l, and Ben Simpson, centre, of the Department of Food Science and Agricultural Chemistry, discuss their presentation with Professors Eric Norris, Vijaya Raghavan, and Shiv Prasher of the Department of Agricultural Engineering.



Many of the staff at Macdonald College - in the Faculty of Agricultural and Environmental Sciences, the School of Dietetics and Human Nutrition, the Institute of Parasitology and the Brace Research Institute - are well known for their international work. As an animal nutritionist with the Department of Animal Science, the present Director of McGill International, Dr. Eugene Donefer, has undertaken projects in Barbados, Trinidad and Tobago, Cuba, China, and Jamaica.

In 1980 McGill International was established on the downtown campus of McGill University to facilitate and coordinate international projects. In April 1990 10th anniversary celebrations, in conjunction with the McGill International Advisory Board Meeting, were held at Macdonald College in recognition of the outstanding contribution Macdonald staff have made to international work.

There are over 120 countries represented in the student body, the academic, technical and administrative staff at McGill. A number of Macdonald College staff are involved in international projects with countries or regions of their origin: E. Chavez, C. Madramootoo, H. Monardes, V. Raghavan, and B. Simpson. McGill International interacts with these

people and with others who are involved in international projects. Support for the university's international endeavours comes largely from government funding with a major number of the projects being financed by the Canadian International Development Agency (CIDA). A smaller but important partner is the International Development Research Council (IDRC). Both were represented at the 10th anniversary celebrations. Congratulations were included in the talk "The Role of Universities in Training Third World Scholars" given by Gerald Bourrier, Director, Fellowships and Awards, IDRC, and by CIDA's Aubrey Morantz, Director General, ICDS Division. A former High Commissioner to Ghana and Ambassador to Ethiopia, Mr. Morantz said in his talk "University Participation in Canada's Development," "International work is not charity on our part; it is a necessity."

Congratulations were also extended by Vice-Principal, Macdonald College, Dr. R.B.

Buckland, then Vice-Principal (Research) G.B. MacLachlan, Vice-Principal (Research) designate R. Pritchard, and other participants in the day's activities. The history of McGill International was outlined by Dr. Donefer and Ginette Lamontagne, Associate Director of McGill International who, in 1978, was asked to coordinate the McGill International Feasibility Study which recommended the setting up of a McGill International Office to increase the university's involvement on the international scene. Tribute was paid to the

Macdonald-Stewart Foundation for financial assistance during the first few years, to Dr. Neil Croll, from the Institute of Parasitology who was the first Director, and to the late Dr. Walter Hirschfeld, Director from 1981 to 1985.

During the morning's session brief project presentations were given by some 20 staff members from the Faculties of Agricultural and Environmental Sciences, the School of Dietetics and Human Nutrition, Medicine,

Management, Education, Science, Engineering, from the Centre for Developing-Area Studies, the Brace Research Institute, and the Institute of Parasitology. The presentations, which were brief, covered a broad spectrum of activities, and the following are even briefer highlights of the projects presented by staff from Macdonald College. The presentations were all on CIDA-McGill projects.

Dr. Chandra Madramootoo, from the Department of Agricultural Engineering, said that less than one per cent of the cropland in St. Lucia is currently being protected against any form of environmental degradation, primarily because of the lack of technology and trained, qualified people. As an example, farmers are continually clearing steep areas. There is a pilot project to look at four different kinds of soil conservation systems and the application of these systems.

Dr. Harriet Kuhnlein, Director, School of Dietetics and Human Nutrition, pointed out

that there are three directors in the research and educational program being carried out in **Guatemala**: Dr. Kuhnlein, Dr. Marilyn Scott, Director of the Institute of Parasitology, and Dr. Gustavo Hernandez-Polanco from the National Committee for the Blind and Deaf in Guatemala (NCBD). The plan is to work with the NCBD to improve existing community level services in the prevention and treatment of ear and eye diseases. Further, to provide educational training and material at the various levels of NCBD personnel to encourage better health, nutrition, and hygiene. (See *The Macdonald Journal*, Mac International, Summer 1990.)

Dr. R.B. Buckland, Dean of the Faculty, spoke on CEMARP (Canada-Egypt-McGill Agricultural Response Programs). He said that this program is to aid Egyptian agriculture primarily through the Agricultural Research Centre of the Egyptian Ministry of Agriculture. He said "Response" is the operative word with experts responding to initiatives within the individual institutions - there are 11 - of the Research Centre. A committee reviews all potential projects. Started in 1986 with \$5 million, 21 projects were completed in Phase 1. Phase 11 began in 1988, and \$15 million for Phase 111 have just been allocated.

Dr. E. Chavez, Department of Animal Science, discussed his swine project in **Peru** which started in 1986 with three objectives: to use pigs as scavengers of waste products; to develop more corn production, and, working with family farm-size units, to increase farm income and use available labour. He said the three objectives have been accomplished but markets and processing facilities are still needed.

Drs Ben Simpson and Jim Smith, Department of Food Science and Agricultural Chemistry, said their overall objective is to develop some methods of food processing, preservation, and a longer shelf life in **Ghana** in collaboration with the University of Ghana. In that country's warm, humid climate food spoils easily and there is a tremendous loss. In times of shortages



McGill International greet special guests: 1 to r, Roman Ozga, CIDA, Gerald Bourrier from IDRC, Aubrey Morantz, CIDA, Ginette Lamontagne, and Eugene Donefer.

brought on by drought there would be food available.

Ron Alward, Assistant Director of Brace Research Institute (BRI), spoke on a cooperative program BRI has with the Ceylon Electricity Board and the National Paper Corporation of **Sri Lanka** to redress the adverse environmental impact of wastes from the two large paper mills in the country. Production of bio-gas from these wastes is expected to reduce stream pollution and provide a much needed energy source for the mills.

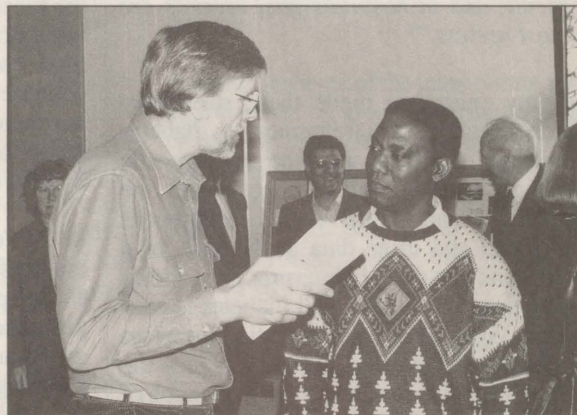
Dr. A.F. MacKenzie, Department of Renewable Resources, said that **Tanzania** is a country with tremendous potential. Problems: variability in soils, fertilizer use is decreasing, and food imports are increasing. He discussed equipment, training, and research needs.

Dr. R. Stewart, Associate Dean, Research, said that the major objective in working with the University of Zimbabwe in **Zimbabwe** is to upgrade the curriculum in crop science, animal science, and agricultural engineering. As in collaboration with other universities, there is an exchange of staff and students between the two campuses.

Dr. R.S. Broughton, of the Department of Agricultural Engineering and Director of the

Centre for Drainage Studies, is the Canadian Director of a cooperative soil and water conservation program with the University of **Cairo, Egypt**. They are improving the laboratories and training staff to work with vegetable producers.

Dr. Humberto Monardes, of the Department of Animal Science, discussed the work being done by Dr. Elliot Block and himself in **Brazil** where they have a cooperative project to upgrade the teaching, research, and extension facilities at the Universidade Federal do Parana through the improvement of a dairy



Professor Ed Idziak, of the Department of Microbiology, discusses the day's proceedings with Professor Leroy Phillip of the Department of Animal Science.

management system operated and used jointly by the university, the Cattle Breeders Association, and the Dairy Cooperatives in the State of Parana.

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Issue in Human Nutrition

Healthy food choices - diabetes still means choice!

by Linda Jacobs Starkey, University Coordinator
Professional Practice (Stage) in Dietetics, School of Dietetics and Human Nutrition



"The intelligent management of a case of diabetes mellitus requires frequent comparisons between the diet, the urinary analyses and the weight of the patient. These data are often

*in four or five different places, and the labor of uniting them is so great that it is seldom attempted. Any accurate study of a case is thus extremely difficult, and in hospitals past records are almost useless."*¹

Seventy years has made these statements unrecognizable as a reference to diabetes nutritional care! With advances in diagnostic methodologies and self-care techniques, the person with diabetes mellitus has insulin needs and blood and urine data at the flick of a switch and can quickly interpret these monitoring data to tell how well diabetes is controlled. Weight loss and emaciation from loss of glucose in the urine no longer plague the person with diabetes; rather, as with much of the North American population, weight maintenance within a healthy body mass index (BMI) is the challenge.

About five per cent of all Canadians have diabetes; from infancy to late adulthood, all ages may be affected. It is more frequent in adults over the age of 40. This is the time when physical activity tends to be reduced while food intake doesn't! Becoming overweight is a risk factor for developing diabetes, as are heredity, aging, and stress.

Should you or a friend develop diabetes, medical and dietetic counselling are essential. The components of good diabetes control include: meal planning, physical activity, medication, monitoring blood glucose and/or urine, dealing with stress, awareness and prevention of complications, and fitting diabetes into your social life.² The first and last can go together beautifully. Meals and snacks

are a social time and, in diabetes management, are doubly important, to:

1. control blood sugar levels;
2. promote desired body weight, and
3. ensure balance and structure to the day.

The meal plan can be for home or eating out, and many people carry a pocket size copy of their Good Health Eating Guide. The only consideration for eating out may be to check with your host to find out the approximate time the meal will be served. If you take insulin and dinner will be delayed from your usual mealtime, eat your evening snack at your usual suppertime and then safely delay the meal.³ To follow a meal pattern for diabetes does not mean restricted cooking and food choices. French cuisine, Italian and Chinese cooking, airline meals and vegetarian choices – all are appropriate and possible with planning and use of the Food Group System of the Good Health Eating Guide.

In the Food Group System, one food choice replaces another within a food group. The eating plan, developed with the dietitian, gives the number of choices from each food group and serves as a guide to daily menu planning.

The nutrition principles are the same as those for the Canadian population as a whole. The difference is in the detail: foods are classified into six groups according to their carbohydrate, protein, and fat content. The groups are: fruits and vegetables, starchey foods, milk, protein foods, extra vegetables, and fats and oils. The food choices within a group are interchangeable. The chart showing Starchy Foods is an example.

For the novice, the Canadian Diabetes Association publishes a recipe book *Choice Cooking*⁴ which gives the food group value of each recipe. This makes it easy to match the meal plan to the recipes and food groups. Once you have mastered the system, the Canadian Dietetic Association cookbook *Eat Well, Live Well*⁵ offers new speedy and nutritious recipes with nutritive value expressed in grams of protein, fat and carbohydrate – easily translated to the food group values.

You may wish to see a dietitian for an orientation to the food choice system if you're frequently preparing meals for a friend or family member with diabetes. Or if you are concerned with healthy eating in general, both these cookbooks offer low fat, nutritious ideas for personal or family food preparation.

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Starchy Foods

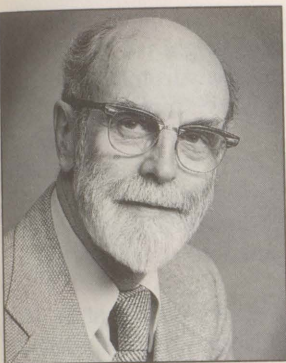
1 choice (Measure after cooking. ☵)

bread	1 slice
*cereal, hot ☵ or cold	125 mL (1/2 cup)
crackers	8 small
corn on the cob	1/2 medium
corn, kernel	125 mL (1/2 cup)
dinner roll	1 small
dried beans or peas ☵	125 mL (1/2 cup)
hamburg or hot dog bun	1/2
macaroni ☵	125 mL (1/2 cup)
melba toast	4 slices
muffin, plain	1 small
noodles ☵	125 mL (1/2 cup)
*plain cookies	2
potato	1/2
potato, whipped ☵	125 mL (1/2 cup)
rice, other grains ☵	125 mL (1/2 cup)
shredded wheat	1 round
* soup	250 mL (1 cup)
spaghetti ☵	125 mL (1/2 cup)

* For more specific measures of cereals, cookies and soups, see the Convenience Foods list published by the Canadian Diabetes Association.

Fun Fact Fable Fiction

by Dr. Ralph H. Estey
Emeritus Professor, Department of Plant Science



House of David

The Christian world will soon be reminded of the circumstances surrounding the conception and birth of Christ, who is reputed to have been a direct descendant

of King David, through Joseph, the husband of the Virgin Mary (Matthew 1: 1-16 and Luke 1: 27 and 32). This, of course, cannot be so if Christ was conceived by the Holy Ghost (Matthew 1: 20) and Joseph was not his father. However, Mary's neighbours believed that her husband, Joseph, was the father of Christ, the first of their several children. They could hardly believe otherwise when Mary was acknowledging in public that Joseph was His father (Luke 2: 48) and thus reinforcing the legend that a messiah would be a descendant from the royal line of the house of David. The Bible is a fascinating book.

Antler Mystery

Members of the deer family shed their antlers every year but few of them are ever found in the woods. One of the reasons for this apparent disappearance of antlers can be attributed to porcupines' passion for salt. Those spiny rodents chew the horns up and swallow them for their salty flavour.

New Brunswick Law

Until the law was amended in 1862, it had been enacted, "That whoever should carnally know and abuse any woman against her will and by force, or whilst she was insensible, should be guilty of rape, and should suffer death as a felon."

Crazy Dictionary

Artery - The study of Art
Bamboo - An Italian baby
Colic - A sheep dog
Dilate - to live longer

Epistle - The wife of an apostle
Fester - Quicken
Goblet - A young turkey
Morbid - A higher offer
Myth - A female moth
Nitrate - Lower than day rate
Tablet - A small table
Urine - Opposite of you're out

Blueberry "Raisins"

Scientists at the University of Maine have learned how to vacuum-dry blueberries to produce a wrinkled, raisin-like product that is full of the blueberry flavour. They have a shelf life of several months.

Spoonerisms

The name of the Rev. W.A. Spooner, for many years warden of New College, Oxford, England, has been associated with inverted expressions since the time he intended to announce the hymn "Conquering Kings Their Titles Take," but actually said "Kinquering Kongs Their Tittles Take."

His students, and friends, never let him forget it. They manufactured other topsy-turvy expressions and hung them on his door. By about 1900 the word "spoonerism" had become a recognized part of the English language.

Some well known spoonerisms include:

- three cheers for our queer old dean - for, three cheers for our dear old queen.
- tons of soil - for, sons of toil.
- those girls are sin twisters -for, those girls are twin sisters.
- he rode off on his well-boiled icicle -for, he rode off on his well-oiled bicycle.
- a blushing crow -for, a crushing blow.
- Sale of Two Titties -for, Tale of Two Cities.

High Falls

There is a waterfall in British Columbia that is at least nine times higher than Niagara

Falls. Takkakaw Falls in B.C. has a vertical drop of 503 meters.

Differing Views

An avant garde reporter in 1990 wrote this account of an incident that she witnessed: "A group of animal-loving activists cut through a fence at the back of the University Animal Research Unit, backed their van across the small lawn to the side of the building, then standing on the van, they smashed a window, forcefully opened a cage and carried away a dog that was being used for some undetermined research purpose. After delousing the dog, they happily released it to unaccustomed freedom."

Another observer, of the same events, reported as follows: "A group of misguided youths crushed a toad and numerous worms and insects as they ran their van across the well-kept lawn behind the University Animal Research Unit, during the past night. In cutting through a fence, they heedlessly destroyed two spiders, and their heavy boots crushed a slug and left several ants mortally wounded. After breaking a laboratory window, and the lock on an animal cage, they stole a valuable dog, about which much research data had been accumulated. After applying a toxic and irritating chemical to the dog, in the hope of annihilating thousands of lice or fleas, which, happily, were not present on the well-cared-for animal, they released the homeless dog to fend for itself."

Blooper

Miss Gregory will have a baby at the next meeting of Mothers-to-be.

The Dreamer

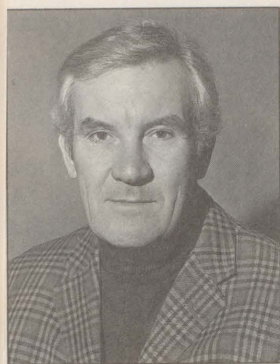
There was a young lady of Waste
who fled from a man in great haste.
She fell as she fled
and addled her head.

Sometimes she still dreams that she is chaste.

Seeking Solutions

Chambly: A New Tough Little Cultivar

by Dr. R.K. Stewart
Associate Dean, Research



We have a lot of cold Quebec winter days ahead and thoughts of spring, sunshine, and strawberries should be for a later issue. It is, however, because of our climate here in Quebec that a new strawberry

cultivar, Chambly, has recently been bred and is now being tested in various regions before being made available to farmers. Chambly is the first strawberry cultivar bred specifically for our local conditions.

Professor Deborah Buszard of the Department of Plant Science, who is the director of the breeding program, is very proud of the

new berry, which she says is delicious. She tells us a little more about this exciting "tough little cultivar."

"After apples, strawberries are the most important cultivated fruit in Quebec, and they constitute a \$14 million share of the province's agricultural production. In 1987 we began working in collaboration with Agriculture Canada at St. Jean to breed strawberries adapted to Quebec conditions and suitable for processing and the fresh market. Chambly stands up to extremes of heat and cold. The plants are tolerant of low winter temperatures. The fruit doesn't soften in the heat and humidity of summer, and therefore less fruit is lost in the picking stage.

Professor Buszard said that Chambly's parents are the cultivars: Sparkle and Honeoye. "Their offspring is particularly suited to processing, which was one objective of the

breeding project," she explained. "The fruit is firm, the colour is bright red throughout, and the sepals stand away from the fruit on a neck so that they can be removed easily."

Chambly is particularly suited for mechanical harvesting and trials are currently underway at Lavaltrie with a small mechanical harvester designed in Nova Scotia.

Having been grown successfully at St. Jean and other Quebec research stations, Chambly is now being tested in other regions in Canada and is expected to be available to growers in 1992. Under the new Plant Breeders' Rights legislation, which was recently passed in Parliament, developers of new plant strains will be allowed to collect royalties from propagators. "This will be very advantageous as we will be able to use the money to fund the breeding project," Professor Buszard said.

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Reunion 90

Reunion Luncheon

A short meeting of the Macdonald Branch of the McGill Graduates' Society, chaired by President Rick Caron, BSc(Agr)'83, preceded the luncheon. Special tribute was made to Trinkie Coffin, BSc(HEC)'62, who was stepping down from the Board. Rick Caron thanked the Executive for their efforts and also thanked the Reunion committee, chaired by Professor Chandra Madramootoo, BSc(AgrEng)'77, MSc(Agr)'81, PhD'85 for all their hard work and called upon Dr. Roger Buckland to propose a toast to the graduates.

Dr. Buckland paid particular tribute to the Classes of '40 and '65 who were celebrating their 50th and 25th anniversaries. He later presented members of these classes with pins and Rick Caron presented mementoes to the Class of '35, the most senior class present.



Grad Society President Rick Caron presents Bashir Sumar, BSc(Agr)'80, with a gift. He was in for Reunion from Sydney, Australia, where he is teaching and studying for his PhD.

Responding to the toast to the grads, Alex McKinney, Class of '65, recalled his days at Macdonald and paid special tribute to the late Dr. Bill Rowles. Bashir Sumar, Class of '80, travelled the furthest: he came from Australia. The Honour Shield for the class with the highest percentage of returning graduates went to Diploma '70. The Class of '40 were second, the Class of '65, third, followed by the Class of '60.

At the luncheon Dip'55 graduates presented a cheque for \$3,000 in memory of their class president, the late Ross Elliot. They also planted a small grove of trees on the college farm in his memory. (See Diploma Corner.)

Neil Richardson, Dip'80, President of the Diploma Graduates Association, invited everyone to attend the barbecue and square dance later that evening.

Rick Caron told the luncheon audience that they are an important asset to Macdonald. "You are the ones that carry forth the message of the quality of the education, the research, and the people that are Macdonald College." He also asked, as did the dean later at his reception, that all graduates do whatever they can to attract top students to Macdonald College.

The hugs of welcome, the friendly chatter, the hearty applause, the class yells: all signs of another successful Reunion Luncheon.

Toast to Macdonald

"It's an honour for me to be asked to give this year's toast to Macdonald College. As chairman of the Class of '65, I have always found ways of getting the more capable members of our class to give these speeches. This time it didn't work!

"As a young boy, I remember coming with my parents to the Canadian Seed Growers' meetings at Macdonald College. Seeing this beautiful campus with all the similar buildings and spacious grounds made a lasting impression on me. Seed grain development is only one area in which Mac has demonstrated its leadership to the world, and over the years Macdo-

nald College has hosted many such events for its agricultural community. As alumni, we are proud and grateful for this reputation.

"I recall my first days at Macdonald College in 1963. My brother-in-law, on staff in Education, introduced me to Dean Dion whose friendly manner made me feel right at home for the next two years. Dr. Nickolaiczuk was our class advisor and personally gave me a great deal of help. I recall he trusted four of us with a key to the Poultry Building so we could study for the final examinations. I must have helped as we all graduated. I was sorry to read the obituary for the late Dr. Rowles in last fall's Macdonald Journal. We will always remember him as a great teacher and a great supporter of student activities. At the Canadian Agricultural Hall of Fame dinner I was proud of the moment when Dr. Moxley was inducted into the Hall. His contribution to Canadian agriculture is only one example of the dedication of this college in assisting the agricultural community. I would be remiss if I didn't also mention the excellent School of Home Economics which was led by Professor Helen Neilson. I think we were very fortunate to have the best teaching staff who were, in computer terms, also 'student friendly.'



The Class of '40 celebrate their 50th anniversary: front row, l to r, Mildred (Stems) Deckman, George Owen, Eleanor (McNutt) Parent, James Eastman, Jean (Green) Eastman, Marg (Goldthorpe) Rossen, William Kydd. Back row, l to r, Lewis McKay, Jean (McDonald) Burchill, Edna (Rettie) MacRae, Grant Parent, Burma (MacAdam) Olson, Valerie (Horn) Gyrisco, Lois (Steele) Sackston, Waldemare Sackston.



A toast to Macdonald's past, present, and future by Alex McKinney, Class of '65.

"Along with our Bachelor of Science degrees came many other learning experiences. It is over 25 years since Larry Moquin's burned down: the biggest loss any Macdonald student of the day could bear. As a resident of temperance Ontario, who thought bars bred fire and damnation and closed at 11:30, I was amazed at the education you could receive in Quebec after midnight! Macdonald College gave us the opportunity to develop leadership roles in the many clubs and activities - as long as marks didn't falter. We met students from all parts of this great nation and world and developed our network of friends.

"Macdonald College has always had excellent leadership, even under the most trying times, and Dr. Roger Buckland is no exception. He has kept Macdonald College in the forefront of development in the fast-moving field of Agriculture. I'm always proud to return to this campus. If you would join with me, I would like to propose a toast to Macdonald College, its past, its present, and its future."

Alex McKinney,
Chairman, Class of '65

Mastery for Service Award

The Mastery for Service Award was first presented in 1980 when Macdonald College

celebrated its 75th anniversary. Professor William R. Rowles was the first recipient. Presented every five years for outstanding service and dedication to the college, the Award went to Professor Helen R. Neilson in 1985. This year's recipient is Rudi Dallenbach, Macdonald College Farm Director until his retirement in 1988. Unfortunately Rudi and his wife, Heidi, were travelling in Europe on Reunion weekend; however, their children Max, Marianne, and Kathy were able to attend the Reunion Luncheon when the presentation was made.

In making the presentation, Dr. Roger Buckland said "Rudi Dallenbach truly exemplifies the mission of Macdonald College put forward by Sir William to serve the farm, the home, and the school. Rudi has spent his life helping the rural community and farmers."

The dean discussed Rudi's contribution to Quebec and Canadian agriculture since he came to Canada in 1948. He said that he had brought life to the college farm and opened its doors to the public. "Thousands of school children have visited the farm and are richer for it," he pointed out. He was a keen organizer of the 75th anniversary, was very involved with the planning and building of the new cattle facilities, and continues to help the college. "Thank you most sincerely for all you have given to Macdonald College," the Dean said in closing his remarks.

Rudi's son Max said that Macdonald has meant everything to his father. He said his father wanted to accept the award not only for himself but for all non academic staff who have served Macdonald College so well over the years. Speaking for his sisters, Max said that they are very proud of his accomplishments here at Macdonald.



Smiling faces at the table for the Class of '35, the most senior class this year.

Class of '51

We are now busy planning our 40th Reunion in Victoria, B.C., to be held June 25 to 27, 1991. Bill Spriggs of our class is Chairman, and it is going to be another great one. Probably 80-90 people will attend. Class of '51: remember to put it on your calendar!

J. William Ritchie
Halifax, N.S.



In Rudi Dallenbach's absence, the Mastery for Service Award was presented to his children: Max, Marianne, and Kathy.



Welcoming Robert McFarlane, Dip. '37, his wife Rhoda, and daughter Cathy, were Diploma Graduates' President Neil Richardson, his wife, Pam, and Marcel Couture, Director of the Diploma Program.



Diploma '55 graduates presented a cheque to Dean Buckland in memory of their Class President, the late Ross Elliot. Dip '55s: David Rankin, John Oswell, George Pirie, Jack Ride, Gordon Beaulieu, Alan Webster, Robert Mitchell, wives, and Anne Elliot, daughters Carolyn and Heather, son Gregory, and Dean Buckland pose for Reunion photo.

Early Reunion



The Class of '55, BSc(HBc), held an early Reunion on the April 22nd weekend in Toronto with 14 graduates attending. We began Friday night with a get-together Québécois Dinner at the home of Barb (Woods) Watt in Mississauga. Saturday was spent shopping or enjoying Les Misérables at the Royal Alex and ended with dinner at the Cherry Hill Restaurant. Sunday saw everyone together at the Burlington home of Liz (Traves) Pick for a Champagne Brunch with memorabilia and artifacts from the Class of '55 days in residence at Macdonald. In photo standing, 1 to r, Liz Wilson, Ann (Playfair) Prasloski, Marg (MacNain) Blair, Janie (McCrimmon) Dean, Pat (MacLeish) Quilliams, Nina (Cupchik) Estrin, Claire (Bruce) Anfossie, Rose (Miller) Scott. Seated, 1 to r, Janet (Lewis) Mathewson, Doris (Hayes) Falt, Liz (Traves) Pick, Beulah (Lee) Atkinson, Liz (Patterson) Kenney, and Barbara (Woods) Watt.

Happy 25th Anniversary to the Class of '65. Front row, 1 to r, Roberta (Smith) McKinney, Janey (Wilkie) Colpitts, Jane (Hall) Hilbers, Pierre Bergeron, Marlene (Robison) MacMillan, Thomas Clapp, Charles Warner, Robert Robson, Susan (Ward) Bryson. 2nd row, Barbara (McNutt) Hunt, Robert Sparkling, Hans Schindler, Sandra (Silverson) Goorbarry, David Dickinson, James Pickett. 3rd row, Donald Marcow, Patricia (Fisher) Goodwin, Ruth (Garland) Marcou, Grant Colpitts, Donald MacMillan, Alex McKinney.



Diploma Corner

Reunions and Remembering

The most senior Diploma class represented at this year's Reunion at Macdonald College on September 22, 1990, was the Class of '37. Robert (Bob) McFarlane, a dairy farmer from Howick, Que., his wife, Rhoda, and a daughter, Cathy, accompanied him. They enjoyed their day and all the various activities. Although Bob McFarlane said he hadn't often been back for reunions, he had been in often when his children were coming to Macdonald. As with so many other Mac graduates, there are several other "Mac" people in the family.

Rhoda McFarlane's mother, May Templeton Keir, took the Teacher's course back in 1911. "She was on the basketball team," Rhoda said, "I have a photo of her in her gym uniform. After Macdonald, she taught for a few years before getting married. The family moved west when I was about five years old." Mrs. Keir lives in Calgary and, at 97, is in wonderful health.

Two of the McFarlane's three daughters came to Macdonald College. Sandra (McFarlane) Brown took two years of Physical Education here and two years on the downtown campus of McGill, graduating in 1968. She now teaches in Montmartre, Sask. In the early 70s Cathy (McFarlane) Woods took the two-year Physical Education course at Macdonald and now teaches in Howick. Son Ken came to Macdonald for the Diploma Program and graduated in 1968. Janice (McFarlane) Gillies, chose Bell Canada after high school. She later moved to Alberta and is general manager for Cablevision.

The question "did you go back home after you graduated and tell your father that there were a whole lot of things being done wrong on the farm," brought great hoots of good-natured laughter from Bob McFarlane. "Of course I did. I told my father what we should be doing differently, and I guess Ken did the same thing when he came home. Ken had a lot of good ideas. Some were hard to accept; some were better than mine. When I was at Macdonald we had an agricultural engineering professor who was emphatic about using underdrainage. He guaranteed us 15

per cent on our money invested for myself, my son, and my grandson, and I think he was right. I didn't do it, but as soon as my son took over the farm in 1974 he started to underdrain and did the whole farm. My son and I get along very well," Bob continued, "and I try to help."

The farm has been in the family since 1906. "It was 100 acres but when I got married I bought 65 acres from the adjoining farm. We milked 40 cows then and still do," Bob said.

Bob McFarlane was disappointed that there were no other '37 Dips at Reunion. He said that they are all pretty well scattered across the country. He's enjoying 'retirement' which gives Rhoda and him an opportunity to travel. On a trip to Prince Edward Island he had a great opportunity to catch up on the news of classmate Lloyd Lockerby in Summerside. Though semi-retired, Bob said that Lloyd has been a very prominent fox breeder in that province.

Ken McFarlane has three sons: Scott, Nathan, and Kristopher. If they want to continue on farming, would their grandfather recommend they get some training first? "I think an agricultural education is good," Bob said. "I would recommend it. I would suggest that any farm boy should come to Macdonald College and take the Diploma program. Apart from the lectures, they will meet boys from

other areas who have different ideas that are just as good or better than their own."

Ross Elliot Remembered

The Class of '55 Dip graduates celebrated their 35th anniversary in a very special way. They presented a cheque for \$3,000 to the Dean and planted a small grove of maples at the college farm: all in memory of their Class President Ross Elliot who died two years ago at Thanksgiving. The money will be used for a trophy and cash prize to be presented annually to the Diploma student who shows the most enthusiasm and willingness to work and to help at the livestock show.

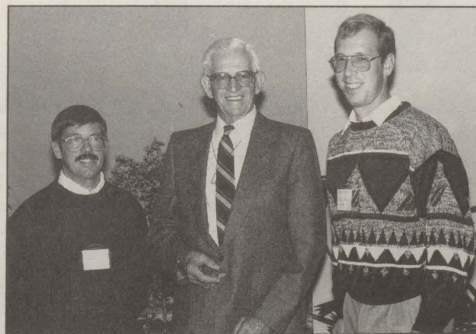
David Rankin, who organized this special occasion, said he was ably assisted by Gordon Beaulieu and Alan Webster and that the class had been very responsive to the idea.

David, Gordon, and Alan: all three said that Ross was a very special man. "He was a quiet fellow," David Rankin said. "He was the kind of person you always wish everyone could know. We always listened to him and took his advice."

Ross was from Howick and David Rankin from Huntingdon. They both returned home where Ross raised poultry and Ayrshires and David has a dairy farm: Holsteins. "He did what diploma graduates are supposed to do," David said, "He went back home and took over his dad's farm. He married the prettiest girl in town. He had a family, and he sent his son back to Macdonald to take the Diploma course."

In his speech at the Reunion luncheon, David Rankin remembered Ross's particular interest in the College Royal and Livestock show and the little red car that took the students up to the farm. Gordie Beaulieu also remembers the livestock show.

Gordie, who is Herdsman at the college farm, remembers that Ross was a keen livestock man and showman while he was at Mac. "He was the one who urged on our class to try for the Class Shield which was awarded to the



Presenting a gold pin to the graduate from the most senior Dip Class present at Reunion, Robert McFarlane, Dip '37, centre, were Marcel Couture, Director of the Diploma in Agriculture Program, and Neil Richardson, President of the Diploma Graduates' Association.



class that got the most points. We spread out and showed in as many areas as possible. I don't think we won, but we tried. The award, in Ross's name, comes naturally. He may not have been a champion showman, but he was a worker and was always willing to help."

Both Gordie and Alan Webster, who raises beef cattle in Knowlton, are pleased that Ross's son Greg, Dip '79, has taken over the farm and is continuing on in his father's footsteps.

"The cheque and tree planting was something we all wanted to do," Alan Webster said. "Ross was a classmate who was a lot of fun. We all took part in the livestock show. I remember the first animal I showed was a pig. In the cold winter days we'd thumb a ride and pile into Ross's car, the rumble seat, or



Members of the Elliot family, centre, the Class of '55 and their wives, Dean Buckland, and Neil and Pam Richardson at the tree planting ceremony at the college farm.

wherever we could fit and drive across the tracks to get ready for the show."

Ross Elliot's wife, Anne, his son, Gregory, and two daughters, Caroline and Heather, attended the Reunion luncheon and the tree planting ceremony that took place later that afternoon. The trophy will be presented once a year; the trees will be enjoyed every day of the year.

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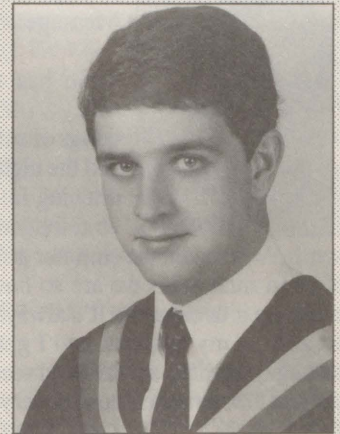
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Thank You

We extend our sincerest thanks to everyone at Macdonald College for their many acts of kindness at the time of Keith's death. We deeply appreciate the flowers sent by the Diploma Class of '89 and the lovely tribute printed in *The Macdonald Journal*. Special thanks to Jackie Jones for her unfailing kindness to our family, to James McCart and John Beerwort for acting as pallbearers, and to all who came to be with us at that time.

We miss Keith's cheerful presence more than words can say but feel that his legacy of generosity and goodwill is reflected in his many friends at Macdonald College.

Raymond and Katherine McDonell
and family

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The Quebec Women's Institutes



President's Message

Time has flown away on the wings of summer and the nights are drawing in. As I write the geese are flying south. Where did the summer go? For many of us in rural areas we are so busy we don't really see it or enjoy it. It's always way too short and, as my husband and I get near retirement age, our little acre of land seems to get bigger and the summers shorter every year.

Quebec Women's Institutes have been busy everywhere. Some of our conveners are off to the Associated Country Women of the World Mini-Conference and an Agriculture in the Classroom workshop in New Brunswick. Yours truly along with Lucy and Bob French were off to Bonaventure and Gaspé counties for a long overdue rally and visit. Everything went well. We had a lovely day in Bonaventure and an afternoon in Gaspé and we enjoyed wonderful, warm hospitality in spite of the weather. We stopped off in Megantic County on the way back and had a visit with them and Quebec County.

Yours truly represented the Quebec Women's Institutes at Townshippers' Day in Bedford. It poured!

Lots of changes are afoot in the QWI with elections coming up next May. There will be new members of the Executive and the Board but change contributes to progress. By now all Branch and County Presidents have received letters concerning a financial problem that is reflected at all levels of QWI. We are not the only society with this problem. I read in the Scottish Home and Country that it is a concern with their many branches, as I am sure it is in many other WIs around the world. Working together we can move mountains; working against each other we accomplish nothing.

Pearle Ingalls Yates
QWI President



A cheque for \$2,000 was presented to QWI President Pearl Yates recently by Mr. Russell Williams, MNA for Nelligan County. This money, which is to be used to assist the QWI meet their financial commitment to *The Macdonald Journal* for subscriptions, was received from Mme Violette Trépanier, la Ministre Déléguée à la condition féminine et ministre responsable de la famille.

Stanbridge East WI in Parade

On July 1, 1990, 14 women and one child took part in the Stanbridge East Centennial Parade. Flora Rhicard and Mary Harvey led these participants carrying a WI banner, which was made for the occasion by Mary Harvey. On it were the WI crest and SEWI 1921 - 1990 for Home and Country.

The ladies were dressed in old fashioned attire and, representing the Institute, marched for Home and Country. One member of Cree Indian heritage was in native dress while another was made up as a clown. All carried blue and gold placards with bilingual environmental messages such as: Think Globally, Act Locally; Recycler il faut le faire; Common Enemy -



Members of Stanbridge East WI take part in the Centennial Parade.

Pollution; Pour l'amour de la vie - pour la vie de l'amour - recyclez; Before you chuck it - check it!; Recycler c'est logique et pratique; Incite action!; La terre n'est pas une poubelle; Take a position!; L'environnement c'est notre affaire; Ideas and action!; La vie de la terre est entre nos mains; Start by the little things, Et si je faisais quelque chose... The earth is not disposable and La récupération des déchets.

The parade was very successful. Several videos were made and all enjoyed sharing in the celebrations. The placards were lined up against a fence in the picnic area so that the important messages could be read during the rest of the Stanbridge East 23rd annual picnic day.

Safety First

by Elsie Prevost

Skin Cancer



Although summer is over, there is still a need for caution in the prevention of skin cancer.

There are those of us who have to work outdoors - farmers, harvest workers, market gardeners, construction workers, professional sports people; there are those of us who, for some reason or another, have to spend time outdoors, and there are those of us who, wishing to obtain "a nice tan," expose ourselves to the sun. Little do we realize how dangerous exposure to the sun's rays is. Medical experts agree that the ultraviolet rays from the sun are the chief cause of skin cancer, premature aging, eye damage, and harm to the immune system, resulting in a vulnerability to infections and diseases.

Fortunately, there are ways of protecting ourselves:

1. Twelve months a year, whenever you go out, rub on a liberal

amount of sunscreen. On very sunny days the Sun Protector Factor (SPF) should be at least 15, less on cloudy days. The best sunscreens are broad-spectrum, meaning they block out most of the ultraviolet radiation in sunlight.

2. Shield your eyes. Whenever you go out, wear ultraviolet-blocking plastic sunglasses or coated prescription lenses that provide protection. Sunglasses also help to shield the area around the eyes.

3. Wear protective clothing A tightly-woven cotton shirt will screen out most ultraviolet radiation. The tighter the weave, the greater the protection. Avoid loosely woven polyesters which let a lot of ultraviolet rays through. Be sure to wear a hat - the broader the brim the better.

In Australia, where the increase in skin cancer is dramatic, the people have a slogan "slip, slop, slap" meaning - before you go out, slip on a shirt, slop on sunscreen, and slap on a hat.

Be alert to skin changes. If you notice any, see a doctor immediately. Although skin cancer is the most common malignancy, it is also the most curable - if caught in time. Keep a watch on any dark moles.

Pie Day at Howick

When Rhoda McFarlane and daughter Cathy accompanied Bob McFarlane, Dip'37, to the Reunion at Macdonald College in late September, she took time to tell Hazel Clarke about the previous day which she had spent in the United Church basement making apple pies with several members of Howick WI. "We advertised among ourselves and our neighbours that we were going to have a pie day. We were going to make apple pies and sell them. We got orders for over a hundred. We had picked windfalls in Covey Hill and bought the dough from Grant's Bakery in Huntingdon. Fourteen of us got together. Some peeled and some pared. Two girls rolled the dough. Another mixed the apples with cinnamon and sugar, another placed them in the pie shells, another came and put a top on, another cringed them

and put them in plastic bags, and they were ready. We sold them all and have orders for about 30 more so we're planning another pie day for mid October.

"The money is going to pay our additional expenses for the Journal. Next year we will do the same thing or something different. It can be done so easily and helps anyone who might find the extra cost a little much."

Quebec Textile Handicraft Competitions

Meetings have been attended by your Expo-Quebec Committee, along with that of the Cercles des Fermières, the Ministry of Agriculture, the Ministry of Cultural Affairs, and the Ministry of Recreation, Hunting and Fishing. Nothing definite has so far been decided. It is clear, however, that the Ministry of Cultural Affairs is most interested in discovering, promoting, and conserving traditional handicrafts. The 1991 competitions are to go on as planned. The final outcome of these meetings will be relayed to you.

Elsie Prevost
Expo-Quebec Committee

HANDICRAFTS 1991

The name and address and the name of each branch and county must be securely attached to each entry. All articles must arrive at the Provincial Office at least one week prior to the Annual Convention.

QWI Competitions

Any member may submit an article in each class. This competition is judged solely at the Provincial level.

1. Over 70 - two hand-quilted pot holders, design optional, sample of fabrics attached.
2. Sewing - Lady's fashion lined vest, plain back, open front (no closures) of printed or patterned fabric. Samples of fabrics attached.
3. Needlework - Lady's sleeveless nightgown with smocked front yoke. Sample of nightgown fabric and threads attached.

4. Knitting - Knitted stuffed animal. Size, pattern, and yarn optional. Fibrefill stuffing. No kits. Samples of work and yarns to be attached.
5. Crochet - Crocheted lady's hat with brim. Pattern and size optional. Samples of work, yarn, and labels attached.
6. Knitting - Children's socks. Pattern and size optional. Samples of work, yarn, and labels attached.

J & P Coats Competition

This competition is sponsored by the J & P Coats Company. The competition is judged at the county level at the County Annual Convention. Winning articles only may be forwarded to be judged at the Provincial Convention.

1. Needlework - Petit point (using Anchor Floss) picture, 5 by 7 inches, unframed, back open, using plain Aida cloth. Threads and labels attached.
2. Crochet - Collar, size and design optional, any J & P Coats crochet cotton. Sample of work, threads and labels attached.
3. Knitting - Four different Christmas decorations, using J & P Coats Red Heart yarn. No kits. Samples of wool and labels attached.

The 1991 Quebec Textile Handicrafts Competition - Group

Weaving

1. Baby's Blanket - Technique: Huck-a-back. Warp and weft optional. Finishing of the ends: Hems. Size: not less than 75 cm X 115 cm. Sample of the technique in the fibres used is required.

Weaving and Making-Up

2. Lady's Short-Sleeved Summer Blouse - Technique: warp, weft and pattern optional. Appropriate finishing. Sample of the technique in the fibres used is required.

Sewing

3. Lady's Nightgown - Material and pattern optional. Fancywork suitable for the material and pattern. Sample of the materials used is required.

Knitting

4. Adult's Sweater - Technique: Aran (Irish).

The Quebec Women's Institutes

Wool or fibre optional. Round neck. Sample of the technique in the wool or fibres used is required.

Fancywork

5. Tray Cloth - Technique: Assisi embroidery. Edging: Pulled threads (open work). Appropriate material and threads. Size: not less than 25 cm X 40 cm. Sample of the material and the edging in the threads used is required.

Registration forms for the Group Competition must be completed and returned before June 21, 1991. Articles to be sent between June 17 and 18, 1991.

With the Branches

ARGENTEUIL Arundel heard tape of Dr. Ellen McLean's interesting address to the Provincial Convention; held a bazaar, and visited a senior citizen's residence. **Brownsburg** viewed slides of International Peace Gardens, which are supported by various groups in the U.S. and Canada, including FWIC. Each member donated a roll of coins to the ACWW for Coins for Friendship. **Dalesville-Louisa** enjoyed a film from the National Film Board entitled "Rebellion of Young David," which was made in Louisa. Held a Treasure Hunt meeting on a member's lawn and looked for goodies tucked in tree branches, flower beds, etc. David Oxley of Vanier College spoke on the 3Rs: Reduce, Reuse, Recycle. **Frontier's** guest speaker, Mrs. Fromholds from Brownsburg who was born in Latvia from where she and her husband escaped during war years, told of a visit back. She mentioned several harrowing experiences before reaching her sister's house. After listening to her the members felt they had much less to complain about. Some of the members' husbands, children, and grandchildren were included at Peg Wilson's meeting and enjoyed her beautiful pool. They also got involved in some contests and enjoyed a barbecue. Rosemary Fields was welcomed as a new member. **Grenville** enjoyed the talk from their County President on Agriculture, gave interesting information re The Macdonald Journal. She also demonstrated the Roto Cutter - a tool used to cut out patterns for quilts. **Jerusalem Bethany** heard the re-

port of the Conference of Primary Food Producers which was held in Bolton, Ont.; Mrs. Susan Slovic, guest speaker, explained the work of the CLSC and its advantages for the community. **Lakefield-Mille Isles** now known as this in the future as members from Mille Isles have joined them. Welcome. This branch was pleased to have a former member, Shirley Riddell, now living in Ottawa, attend their meeting.

BONAVENTURE Black Cape celebrated its 40th anniversary last year and showed 26 deceased members on the Memorial Roll. It's encouraging to learn that three new members have joined this year. (Thank you Dorothy McNair for this information.)

BROME The County Convener received only two reports. **Austin** donated to the CLSC towards purchasing car seats to be rented out to new mothers. **Abercorn** had many new vendors for their Annual Yard Sale and held afternoon tea in honour of a member moving away. It's interesting to note that **Austin WI** first funded the Memphramagog Library when it was housed on a couple of shelves in the Princess Elizabeth School. Now the Municipal Library is in a new building and Austin WI continues to contribute annually. From Austin, there are 18 junior and 51 adult members of the sum total membership, end of '89 year, of 2,143.

COMPTON Sawyerville had two farm women, Doris McBurney and Mary Kirby, who are members of the "Survival of Farms" speak on one of their aims which is a form of Day Care for Farm Children while mothers do morning and night chores or work in the fields. Safety of their children is their consideration. An information report on ACWW and its magazine was given by Wilda Robinson. **Bury** took jars and bottles to the recycling depot. Gave WI buttons to Audrey and Lena Dougherty, Sue Schmidt, Ferne Pehleman, Grace Rider, Hazel Kerr, Nina Rowell, and Muriel Fitzsimmons for having perfect attendance. Great Record!

CHATEAUGUAY-HUNTINGDON The branches from this county report their meetings in the Gleaner and appreciate the coverage

received in *The Macdonald Journal*. They have donated FWIC cookbooks and the Pioneer Women book to the town libraries. Reviews of ACWW, FWIC, and QWI were done at meetings. They've enjoyed many speakers on many interesting topics; taken several trips, and had several demonstrations on the wool industry, in greenhouses, and also on glass works.

GATINEAU County celebrated their 70th anniversary. Congratulations! Donated to Coins for Friendship in memory of Hilda Graham. Heard readings on breakthrough for eye operations; drugs for breast cancer, and heart repair.

MEGANTIC Kinnear's Mills had Jan Lowry demonstrate different embroidery stitches and show a tablecloth she was working. **Inverness** welcomed three guests at a meeting.

MISSISQUOI Cowansville members mourn the loss of a member, Rita Phelps, who passed away June 10, 1990. **Dunham** book prizes given to Don Campbell and Cheryl Evans, students in Heroes' Memorial Elementary School; the interesting article in *The Macdonald Journal* on the McElroy family was recognized. Mrs. McElroy was a Charter Member of this branch, formed on January 17, 1911. **Fordyce** a former member living in Perth, Ont., was a visitor in May, and this branch was asked to make a return visit to her WI. Congratulations to Mary McClure on receiving first prize on her crocheted tablecloth at QWI level. Mr. Pascal Delfino, Director of Brome Missisquoi Anglophone Home and Youth Services, was guest speaker. June and July welcomed two guests. Jennifer Thornberg and Nicholas Norton received book prizes for most improvement in French at Heroes' Elementary and two others were presented to the St. Leon's School for improvement in English. Members visited Brome Historical Museum and lunched at "The Pub." **Stanbridge East** Last May 18 Stanbridge East and the community lost a valued member and friend when Ruby (Laduke) Moore passed away. I have written a tribute to Ruby and quote briefly from it: "When the Fordyce Branch of the Women's Institutes was formed in 1946, Ruby was a Charter Member. She latter transferred her membership to

Stanbridge East in 1968. As in all organizations she was an enthusiastic working member, taking part in all phases of the Institute. She and the late Flora Creller represented Missisquoi County at the first Federated Women's Institute Conference in Ottawa. She made and donated a United Nations Flag to the County. She and her family gave the WI picnic area at Fordyce and erected a monument to John Fordyce, its first settler. She helped write a Tweedsmuir History and compiled the history of the Stanbridge East WI Branch. She initiated a WI program on radio station C.H.E.F. in Granby. She wrote the script "Then and Now" for the County WI Jubilee. She will long be remembered, for she has left us a tremendous legacy of accomplishments and given us a shining example of courage and enthusiasm in the face of adversity, hardship, and pain."

PONTIAC This County sponsored its 6th annual information seminar with 60 guests and members from eight branches attending. All bases were covered. Rita Beimers gave a talk and demonstration on a wide variety of handicrafts. Stone Consolidated Pulp Mill gave a good session on environment, and "Good Will Radiation" was the topic of the speech by Mr. Finley from the Chalk River Nuclear Plant. Lucy Brownlee spoke on the progress of her Home Care Agency. A local farmer showed slides of St. Lucia where he was on exchange, and two students put on a program "Pontiac students against impaired driving." **Clarendon** held an Environmental Fair. It was well attended with demonstrations on composts, lamb recipes, fleece: washed, carded yarn and socks, recycling, the alternative bleach, and homemade cloth diapers were for sale. **Wyman** viewed a film from the agriculture office on pollution and what it does to our lakes and rivers.

RICHMOND Richmond Young Women's guest speaker was Lisa Elvin, sales and marketing teacher at the local high school, who gave an interesting account of this vocational course. Two items of concern were lack of organized recreational activities for today's youth and the drug problem. The Publicity Convener in this County had a display and sales booth at the Farm Day held in June. Marjorie Lancaster was presented with a 25-year pin.

Spooner Pond held Memorial Services for Blanche Fortier and Vladimir Ignatieff. Citizenship Conveners had a float for July 1st. Karen Banfill and Mark Pezzie were recipients of burseries at the Richmond Regional High School.

ROUVILLE Abbotsford roll calls include jokes, international news items, nature stories, and so on. Convener reports are informative and interesting. Members were entertained by a non member who displayed needlework crafts of many varieties and explained the method in which some were done. Held a contest on flags and a sale of plants for Coins for Friendship.

SHEFFORD Granby Hill, Granby, and Waterloo schools were contacted to have students write essays on environment. The Townships Sun ran an article on the WI being formed in 1924. A report on Earth Week was that the convener's husband planted maple trees when he was young and now, at 84, is tapping these trees. Two members were interviewed by a local French paper on the 50 years of women's right to vote. Tom Cahill, attending Massey-Vanier Regional, was the Scholarship recipient which will help to further his studies in Business at Champlain. Level 6 prize winners for an achievement/or improvement were: Eric Lewin, Elizabeth Trudeau, Josee Harris, Alexander Filion, and Alison McGregor. Joined with **Granby West** Branch at a local restaurant for dinner. Granby West reported a new industry coming to Bromont which will manufacture latex products, specializing in rubber gloves.

STANSTEAD Ayer's Cliff made donations to the school to help students on their trip to Parkside Ranch and towards the renewal of the Ranger Rick magazine. Having recently celebrated their 75th anniversary, they were honoured to have Miss Holmes - a member for 63 years - present for the occasion. **Hatley Centre** WI is a group member of the Massawippi Protection Inc., and many members of this branch do volunteer work. They recently toured the Uplands Museum in Lennoxville, hosted the county meeting when Bob and Dyanne Murray spoke about their jewelry made from granite. **Stanstead North** entertained the teaching staff of Sunnyside School in Mansure School House and to aid the maintenance of

this historical school, they donated the proceeds of a salad supper. Four schools in the area recently visited this school and were given its history.

SHERBROOKE County sends a handicapped child to camp for two weeks during the summer and sponsors the School Fair. Some members attended the Regional Farm Women's Conference and enjoyed guest speaker Donna Lunn, Vice-President of Ontario Farm Women's Network. They also participated in workshops held on Organic Gardening, Landscaping, and Nutrition. Many branches were made more aware of various Canadian industries at their spring programs: maple sugar, wood. **Lennoxville** made a Canadian Industry display at the museum when they prepared and served a meal for 21 German Exchange Students and their teachers, the menu being Canadian products. This county's members had a booth at Lennoxville's Friendship Day Parade. As well as offering free hot and cold beverages, their display featured a framed picture of Adelaide Hoodless, towels and posters. At the same time Lennoxville branch members were serving punch and cookies at the library during the launching of Arthur B. Lovelace's book "Memories of an Outport Son." All branches are conscientious about recycling and concentrated on beautifying their surroundings. All branches were invited to hear Agnes Keenan's report on the 4th National Farm Women's Conference in New Brunswick.

Things I Learned Through WI Reports

- * Plant carrots between cabbage plants to stop cabbage worms.
- * Contact Cement used to glue tiles on plastic walls can be removed with Crisco.
- * Clean a cold dirty iron with toothpaste.
- * Vaseline can remove tree balsam.
- * If gravy is too salty, add a bit of brown sugar, and if you want a browner gravy, either brown the flour in the oven or add some coffee.
- * "A Framework for Discussion on the Environment," published by The Green Plan, is available on request.

Barbara E. Harvey
QWI Publicity

Newsmakers

On Campus

DR. SUZELLE T. BARRINGTON, Department of Agricultural Engineering, has been presented with the Canadian Society of Agricultural Engineers-Canadian Sheet Steel Building Institute (CSAE-CSSBI) Award in recognition of "outstanding and exemplary contributions to agriculture through extension, design, teaching and research related to farm buildings and rural environment enhancement." The award is given annually.

DR. GARTH COFFIN, of the Department of Agricultural Economics, has been named Second Vice-President of the Agricultural Institute of Canada.

DR. D. K. McE KEVAN was honoured at the recent Colloquium on Tropical and Temperate Agroecology, held at Padova University, Italy. His citation reads: "A pioneer of soil zoology, with his enthusiasm and dedication, he has inspired generations of young people to take up the study of soil biota. He has contributed greatly to the development of Agroecology and Soil Ecology."

DR. AJJAMADA C. KUSHALAPPA, of the Department of Plant Science, has received the Dr. and Mrs. D.L. Bailey Award, which commemorates one of Canada's outstanding plant pathology teachers and his wife, and is given in recognition of a noteworthy publication demonstrating the benefits of plant pathology research to humankind. The award is presented by the Canadian Phytopathological Society. Dr. Kushalappa received the award for his three chapters in the monograph, *Coffee Rust: Epidemiology, Resistance, and Management*. This comprehensive book is edited by Drs. Kushalappa and A.B. Eskes.

DR. VIJAYAG.S. RAGHAVAN, Department of Agricultural Engineering, was the recipient of the 1990 John Clark Award for his "outstanding contribution to the field of post-harvest technology, processing and food engineering through teaching, research, extension and industrial involvement. The award, in memory of John Clark, is given annually to the Canadian Society of Agricultural Engineers (CSAE) member who, in the opinion of the awards committee, has produced outstanding work."

DR. F. R. VAN DE VOORT, Chairman of the Department of Food Science and Agricultural Chemistry, was acclaimed President of the Canadian Institute of Food Science and Technology (CIFST) at the Institute's annual conference held in Saskatoon, Sask.



Tree Planting

On September 22 Macdonald College was extremely pleased to welcome the family of the late Charles E. Ste-Marie, BSA'28, from Longueuil, Que. The family planted an oak tree in memory of Mr. Ste-Marie who had enjoyed his student days at Macdonald. It was very appropriate that they chose an oak: Mr. Ste-Marie often mentioned the numerous oak trees on campus.

Dr. Roger Buckland, Vice-Principal, Macdonald College, thanked the Ste-Marie family for their generosity to Macdonald College and said he was pleased with the choice of an oak and delighted with the location: outside the PATLQ Inc. offices in what used to be the Poultry Building. As a student and later as a poultry scientist, Dr. Buckland spent made hours in that building, and as Director of the Poultry Unit, he had an office there. He welcomed the Ste-Marie family to the campus and hoped that they would return. Dr. Buckland, far right, with, l to r, Mr. Ste-Marie's son, François, his wife, Mme Thérèse Ste-Marie, daughter, Sylvie, François' daughter, Genevieve, and wife, Lucille.

Off Campus

The OVC Museum at the University of Guelph is now the C.A.V. Barker Museum of Canadian Veterinary History. This is to acknowledge the years of work in collecting historical and archival material by Clinical Studies Professor Emeritus CLIFF BARKER, MSc(Agr)'45.

RICHARD HUGGARD, BSc(Agr)'58, was one of five Nova Scotians to be recognized by the Canadian 4-H Council for their support of the 4-H program in Canada.

Serving on the new P.E.I. Agricultural Development Corporation Board will be JOHN MacKINNON, BSc(Agr)'50, and, representing the Department of Agriculture, Dr. GORDON MacEACHERN, BSc(Agr)'57, Deputy Minister, and TERESA MELLISH, BSc(Agr)'68, from the Planning and Operations Branch.

FREEMAN L. McEWEN, BSc(Agr)'50, retired on August 1, 1990 from his position as Dean of the Ontario Agricultural College. He was recently elected President-Elect of the Agricultural Institute of Canada. Recognized as a leader in the development of integrated pest management programs in Ontario, Freeman McEwen is a Past-President of the Entomological Society of Canada and of the Canadian Pest Management Society.

JACK A. CUTCLIFFE, BSc(Agr)'52, MSc(Agr)'54, has retired after 28 years with the Agriculture Canada Research Station in Charlottetown, P.E.I. He joined the Station as a Research Scientist and served as Head of the Potato and Vegetable Section of the Station since 1970.

DR. LLOYD B. MacLEOD, BSc(Agr)'52, MSc(Agr)'53, has retired after 37 years with the federal public service. He joined Agriculture Canada as a research officer at the Experimental Farm in Nappan, N.S. in 1952. He became head of the Soils and Plant Nutrition Section. He transferred to P.E.I. in 1965 and two years later was appointed Head of the Soils Section of the Charlottetown Research Station where he con-

tinued studies on the nutrient requirements of forages and cereals. He was appointed Director of the Charlottetown Research Station in 1970. He has been a member of many national and international scientific societies and has also been extensively involved in community organizations.

HERB MacRAE, BSc(Agr)'54, MSc(Agr)'56, PhD'60, DSc'87, is the first recipient of the Distinguished Alumnus Award of the Nova Scotia Agricultural College. The award was created to honour alumni from NSAC who have distinguished themselves in their contributions to NSAC and to the field of agriculture.

H. LLOYD PALMER, BSc(Agr)'57, is the General Manager of the newly formed Prince Edward Island Potato Board. This Board replaces the Potato Marketing Commission.

KEVIN AUCOIN, BSc(Agr)'64, has been appointed a member of the Newfoundland Agricultural Products Marketing Board.

DR. BRIAN KENNEDY, BSc(Agr)'65, MSc(Agr)'70, of the Centre for Genetic Improvement of Livestock at the University of Guelph, has received the 1990 Rockefeller Prentice Memorial Award of the American Society of Animal Science for outstanding research in animal breeding and genetics. The award was presented at the annual meeting of the A.S.A.S. at Iowa State University.

JACK REDDEN, BSc(Agr)'66, who is Director, Animal Industry Branch, N.S. Department of Agriculture and Marketing, has been made an honorary member of the Canadian 4-H Council in recognition of his 30-year commitment to 4-H programs on a local, provincial, and national level where he had been President of the Canadian 4-H Council. He is only the second person in the history of the Canadian 4-H Council to be presented with this award. Jack Redden was also recently appointed Vice-Chairman of the Nova Scotia Beef Commission.

PHILIP STEAD BSc(Agr)'67, has been appointed Manager of the Ruminant Livestock Section of the Animal Industry Branch of the N.S. Department of Agriculture and Marketing. As a

23-year employee of the Animal Industry Branch, Philip Stead has been responsible for the dairy program in Nova Scotia.

At the annual meeting of the Atlantic Dairy Livestock Improvement Corporation, PAUL JENSEN, BSc(Agr)'69, was appointed representative for the New Brunswick Department of Agriculture. VALERIE CARMICHAEL, BSc(FSc)'73 is Vice-Chairman of A.D.L.I.C.

ALY M. SHADY, MSc(Agr)'73, has been awarded the 1990 Engineering Medal in the management category by the Association of Professional Engineers of Ontario for the planning and management of over 30 international development projects in 15 countries. Aly Shady is Chief, Irrigation Section, Canadian International Development Agency, and also an Adjunct Professor, part-time, in the Department of Agricultural Engineering.

DR. KAREN LAPSLEY, BSc(FSc)'74, is the Assistant Director, Research, at the Agriculture Canada Food Research and Development Centre in St-Hyacinthe, Que.

RONALD MAYNARD, BSc(Agr)'76, is the representative for Summerside District on the P.E.I. Milk Marketing Board.

CHRISTINE MERCIER, BSc(Agr)'77, has been appointed Director of Member Services for the Canadian Feed Industry Association. After graduation Christine worked for 1 1/2 years in Toronto at the Jennison Surgical Animal Research Facility and in 1979 joined the Quebec Shur-Gain Division of Canada Packers as an animal nutritionist.

RHONDA S. BEAUREGARD, BSc(Agr)'79, has been appointed Assistant General Manager and Editor of Publications at l'Ordre des agronomes du Québec.

LUC CHAREST, BSc(Agr)'80, recently joined the cooperative workers with Organisme canadien pour la solidarité et le développement (O.C.S.D.) in Rwanda as an agronomist.

MORRIE PAUL, BSc(Agr)'80, is a Rural Development Adviser for a CIDA-University of Guelph project in Indonesia.

MICHELINE LAMBERT, BSc(Agr)'81, MSc(Agr)'86, has been appointed Coordinator of French-language publications for the Ontario Ministry of Agriculture and Food. Micheline will be living in Alfred.

NEIL BURNS, Dip'82, and Marlene Cairns were married on August 4, 1990, in the Huntingville Community Church, Huntingville, Que. Neil and Marlene are living in Island Brook.

ANDREW KIELLY, BSc(Agr)'83, MSc(Agr)'87, who has been studying for his PhD at the University of Guelph, has resumed his position as Forage Specialist with the P.E.I. Department of Agriculture. His research for the PhD was on breeding alfalfa with the goal of producing hybrid alfalfa varieties.

LOUIS LACASSE, Dip'84, and Susie Bienz are the proud parents of Adrien Jacques Lacasse, born January 24, 1990, weighing in at 7 1/2 pounds.

ANDRE CHOLLET, Dip'85, is now employed as a Quebec Representative for Cargill.

CHRISTA PITCHER, Dip'85, is studying Fine Arts at Concordia University in Montreal.

MARC VEZINA, BSc(Agr)'86, is working towards his MSc in International Development at the University of Laval.

JUDY COFFIN, BSc(FSc)'87, is studying Graphic Design at Dawson CEGEP in Montreal, Que.

FINDLAY MacRAE, who is finishing his Master's degree in Agronomy here at Macdonald, is the new Secretary-Manager of the Nova Scotia Grain Marketing Board. Part of his job is finding new markets and crops for Nova Scotia growers. The Board deals with domestic markets; it does not export

grain. He is also Secretary-Manager of the Atlantic Grains Council.

Deceased

JESSIE NAISMITH, of Perth, Ont., on July 5, 1990. Miss Naismith was a graduate from the School of Household Science in Institute Administration. She was an early pioneer in the dietetic profession in Quebec and the rest of Canada. She interned at the Toronto General Hospital and established the dietetic internship at the Ottawa Civic Hospital in 1926. She became Director of Food Services for the Bell Telephone Company in Montreal, a position she held until her retirement.

R. J. HASLAM, BSA'25, in Leamington, Ont. No further information.

HECTOR ALLAN RICHMOND, MSc(Agr)'35, in Nanaimo, B.C. on July 9, 1989.

CHARLES T. MITCHELL, Dip'38, of Gatineau, Que., on June 4, 1990.

DONALD F. STEWART, BSc(Agr)'38, of Charlottetown, P.E.I., on July 28, 1990.

DR. WM. R. FIRLOTTE, MSc(Agr)'47, in Noranda, Que., No further information.

FRANCES I. (BOURKE) MacLEOD, BSc(HEC)'46, in Charlottetown, P.E.I. No further information.

WILLIAM F. VAN HORN, MSc(Agr)'48, of Venise, Que., on June 30, 1990.

PROFESSOR JOHN E.M. YOUNG of Baie d'Urfé, Que., on September 2, 1990. Professor Young taught in the Faculty of Education here at Macdonald College and on the downtown campus of McGill. He retired in 1979. Professor Young and his family lived on campus for several years before moving to Baie d'Urfé.

R. HOWARD WEBSTER, O.C., B.A.

The Macdonald Community was deeply saddened by the death of R. Howard Webster,

O.C., B.A., on August 19, 1990. Mr. Webster was a great Canadian, an astute business leader, and a generous philanthropist. He had many interests throughout his career and owned companies in many sectors. Mr. Webster's involvement in agriculture included several businesses in the food sector as well as Dundas Farms in P.E.I. In 1985 he took a keen interest in Macdonald College and the redevelopment of our farm buildings. The new cattle facility was made possible through a major capital campaign gift from the R. Howard Webster Foundation. The Foundation has also made a generous gift to Phase II, the Swine Facility, construction on which should begin next spring.

The new farm facilities for teaching and research in Animal and Poultry Science are called The R. Howard Webster Centre. We are extremely proud to honour Howard Webster in this way.

Frances Wren

There has always been a mutual attraction between the Maritimes and Macdonald College. Frances Wren, who died on September 24, 1990, in St. Andrews, N.B., exemplified this attraction during her 30 years as a member of staff.

A true Maritimer, Fran grew up in St. Andrews where her father, a retired sea captain, was the Harbour Master. Her artistic ability was manifested early in life when she came under the influence of Miss Grace Helen Mowat, a well known craftswoman. She also studied painting with the artist, Lorne Harris.

In 1942 Dr. Ivan Crowell was instrumental in establishing a Handicraft Department at Macdonald College which offered a short course sponsored by the Canadian Red Cross Society and the Saint John Ambulance Association to train personnel to help with rehabilitating returned members of the armed forces. He asked Miss Mowat to join the staff but she declined and recommended Frances Wren for the post. It was a happy choice.

In 1948, when the short course was discontinued, a new course was established to train

persons who wanted to teach handicrafts, and Frances was placed in charge of it. In addition to the full time students, extra-curricular courses were offered to the community in many of the creative art forms: weaving, leather work, silver crafting, and wood carving, and these proved to be very popular. When in 1960, the formal program was discontinued, Fran remained on staff until 1972, teaching weaving as part of the textiles course in Household Science. She also continued with a full program of evening and Saturday morning classes.

Frances Wren was a unique person. Not only was she a gifted and creative artist, but she could also teach and inspire even the least gifted of her students to create something in which they could take pride.

At the college Fran was known and liked by all. She was generous with her time and was ever willing to assist in creating exhibits and in painting posters, helping staff and students alike. She even helped with floats for town parades and was known to members of the Women's Institutes for her participation in their programs. She also helped with the Extension Department's Lacquemac camp and community schools programs.

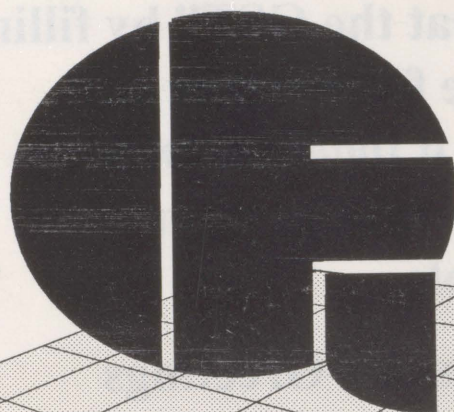
Fran had a wide circle of close friends with whom she played bridge, went on picnics, and travelled. When she retired, she went home to live with her sister, Lelia, in their historic family home in St. Andrews. There she continued to teach painting to senior citizens, worked for the historical society, and for her church. She belonged to the MAD association, those involved in music, art, and drama.

Each year Fran created a unique Christmas card which her friends eagerly awaited. Fran will be widely missed by her friends and in her home community.

Helen R. Neilson
Emeritus Professor
School of Dietetics and Human Nutrition

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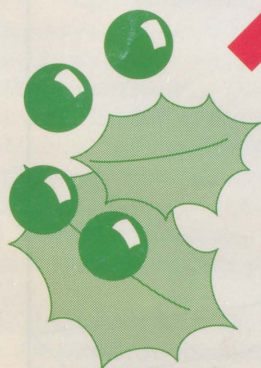
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